Government
Publications

Ontario, Legislative Assembly.

Sessional papers

SESSIONAL PAPERS.

VOLUME V.—PART I.

SECOND SESSION OF THE SECOND PARLIAMENT

OF THE

PROVINCE OF ONTARIO.

Session 1873.

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No. 18 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of the names and residences of all persons appointed as Immigration Agents since December the 21st, 1871; the dates of their several appointments, the fees to be paid for their services, the names of the places to which they have been instructed to go, together with a copy of all instructions to such agents; also, all correspondence with the Dominion Government relating to Immigration, together with all Orders and Minutes in Council in respect to the same.

No 19 .... Copies of all Orders in Council appropriating the Railway Fund subsequent to the second of February, 1872.

No. 20 .... Copies of Correspondence and Orders in Council respecting the Midland Railway Company subsequent to the first of February, 1872; also, Supplementary Return.

No 21 .... Copies of Correspondence and Orders in Council respecting the Northern Extension Railway Company subsequent to the nineteenth of February, 1872; also, Supplementary Return.

No. 22 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all correspondence since February, 1872, relating to the payment of a subsidy to the Southern Extension of the *Wellington, Grey* and *Bruce* Railway Company, and the *Toronto, Grey* and *Bruce* Railway Company, with copies of all Orders in Council respecting said Railways; also, Supplementary Return.

No. 23 .... Return to an Address to His Excellency the Lieutenant Governor, praying that His Excellency will cause to be laid before the House, copies of all correspondence between the Government and the *Canada* Car Company, and a copy of the contracts said to have been made between the Government and said Company, regarding the labour of convicts who may be confined in the Central Prison in course of erection at the City of *Toronto*; also, Supplementary Return.

No. 24 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all reports from the Inspectors of Division Courts, touching the working and general condition of the officers of said Courts.

No. 25 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of all sums paid by the Treasury Department to Railways, as Bonuses, within the last twelve months, specifying the Railways to which sums were paid, and the dates of such payments.

No. 26 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Orders in Council, relating to the Law and Equity Commission; also, copies of all instructions to said Commission, and a memorandum of the costs and expenses attending such Commission.

No. 27 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all correspondence in reference to the Arbitration between *Ontario* and *Quebec*.

No. 28 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excelleney will cause to be laid before the House, copies of all correspondence (if any) in respect to the candidature, or intended, or supposed candidature, for a seat in the House of Commons of *Canada*, at the recent general election of members to serve in said House of Commons, of the Sheriff of the County of *Halton*.

No. 29 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a statement of the tariff of fees now paid to Constables, High Constables and Special Constables, for all and every service, both civil and criminal, which they are required to perform.

No. 30 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return stating concisely:—

1. The date of the establishment of the Normal and Model Schools in this Province.
2. The total outlay on capital account in respect of the said Schools, including the purchase of lands and every expenditure strictly chargeable to capital account.
3. The annual outlay since the establishing of the said Schools, including staff of teachers, superintendence, maintenance and every expenditure not charged in capital account.
4. The names of the persons in each year, with their places of residence, who have received instruction at the Normal School, with the view of fitting themselves for teaching in this Province, and the average number of them who have made and are still making teaching their profession, and how many of such teachers are now teaching in the Province, and in what counties they are now teaching.
5. The average cost to the country, including interest at six per cent., in the said capital outlay for the training of each teacher who has made teaching in this Province a permanent occupation.

No 31 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return stating the number of scholars attending the Normal School for the purpose of qualifying as School Teachers for the years 1869, 1870, 1871, 1872, respectively; also, the largest number of pupils the present Normal School is capable of accommodating throughout a session thereof.

No. 32 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Minutes and Orders in Council relating to the Agricultural College; the names of all persons appointed to inspect the several proposed sites for said College; the instructions given such persons, together with a memorandum of the expenses of such persons; also, a copy of the instructions given to Professor *Miles*, and of his report to the Government.

No. 33 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of the number of first, second and third class certificates granted to School Teachers during the year 1872; also, the number of persons who have made application for certificates and have been unable to obtain them during the same year.

No. 34 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Orders in Council (if any), and correspondence (if any) in reference to the establishment in *Ontario* of any additional Normal Schools.

No. 35 .... Statement of the affairs of the *Gore* District Mutual Fire Insurance Company for the year 1872. (*Not printed.*)

No. 36 .... Returns, forwarded to the office of the Provincial Secretary, of all fees and emoluments received by the Registrars of *Ontario*, for the year 1872, made in accordance with the provisions of the Statutes of *Ontario*, 31 *Vic.*, c. 20, s. 74.

No. 37 .... Copies of all correspondence, not already brought down, between His Excellency and the Canadian Government; and between the Governments of *Ontario* and *Canada* touching any addresses of this House, or touching Immigration, or touching the Public Debt and Assets (in so far as the Public Debt and Assets are concerned).

No. 38 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Orders in Council, and any correspondence, telegraphic and otherwise, upon the subject of or in reference to the arresting or delivering to justice of the murderer or murderers of the late *Thomas Scott*, of the Province of *Manitoba*, and in relation to the reward of $5,000 offered by the Government of *Ontario*, during the past year for his or their apprehension.

No. 39 .... Report of the Senate of the University of *Toronto* for the year 1871-2. (*Not printed.*)

No. 40 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return giving the names, places of residences, and emoluments of all Employees, permanent and temporary, appointed since 1st January, 1872, in the following offices: —Crown Lands Department, Public Works Department, Provincial Secretary's, Treasurer, Attorney-General, and Legislative Assembly.

No. 41 .... Statement of the expenses incurred in connection with the *Proton* outrage investigation, showing the names of the witnesses and the sum paid to each, the names of the reporters and the sums paid to each, and all other expenses incurred in consequence of the appointment of the *Proton* Outrage Committee; also, the authority under which the several payments were made.

No. 42 .... Copy of the Regulations of the Council of Public Instruction, and other instructions relating to the admission of pupils to the High Schools or Collegiate institutes.

2. A copy of the Order in Council suspending or disallowing these regulations, and a copy of any instructions issued by the Government to boards of trustees on this subject.
3. The number of pupils admitted to each High School and Collegiate Institute since the suspension of these regulations; the names of the schools and institutes, and of the examiners, and the subject on which the candidates were examined, the extent of the examination in the subjects, and the number of marks obtained by these pupils.
4. Copies of any reports to the Department, or to the Government in regard to the examinations and admissions from inspectors, trustees or other parties, and copies of any correspondence, or reports throwing light upon the operation of the law since the date of the suspension of the regulations on the subject.

No. 43 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House copies of all correspondence between the Government, or any Member thereof, and the *Canada* Central Railway Company, or any officer or agent thereof, relating to the claim of the said Company upon the Province of *Ontario*, for 12,000 acres per mile of the Railway of that Company constructed from *Carleton Place* to *Ottawa*, a distance of twenty-eight and-a-half miles, making in all 342,000 acres; with copies of the pleadings and judgments of the Court in the suit of the *Canada* Central Railway Company against the Queen, to compel the Crown to set apart and grant the said land to the said Company; also, Supplementary Returns (2).

No. 44 .... Copy of correspondence regarding the Boundary Line between the Province of *Ontario* and the North West Territory.

No. 45 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of all lands sold or leased by the Government between the first day of December, 1871, and the present time, to Members of the House, or to any firm, or company in which any Member of the House was a partner; including mineral locations, and licenses to cut timber on the lands of the Crown; and also, all renewals of such licenses; also, Supplementary Return.

No. 46 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of all correspondence between the Government and the Municipalities, or officers of the Municipalities interested in the Drainage Act, and all communications received by the Department of Agriculture, relating to the working of the present Drainage Act.

No. 47 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Orders in Council, and all correspondence in reference to the Insurance with the Isolated Risk Insurance Company, or any other Insurance Company, of any of the Public Buildings of this Province.

No. 48 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a statement from the Registrar of the Court of Chancery shewing the average sum paid in Law Stamps in each suit, and on the average what percentage of such bills is disbursements; also, a like statement from the Clerk of the Crown in the Queen's Bench, and from the Clerk of the Crown in the Common Pleas; also, a return from the Deputy Clerks of the Crown and Clerks of the County Courts, stating the amount each has received from County Court fees and services, Surrogate Court fees and services, filing and searches, &c., *in re* chattel mortgages, and as salary, and for other services as Deputy Clerks of the Crown, and Clerks of Assize; and the number of writs of mesne process and other writs, including subpœnas in the Superior Courts of Law; and the number of records entered for trial, and the number of judgments entered for the year ending 31st December, 1872, without details, except as aforesaid.

No. 49 .... Report and Evidence of the Select Committee appointed in the session of 1871-2, to enquire into the conduct of J. W. Lewis at *Proton*, during the election for *South Grey*.

No. 50 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a

return showing the valuation of lot twenty-two in the tenth concession of the Township of *Windham*, in the County of *Norfolk;* the state of the lot as to clearing and improvements at the time of the valuation; the amount of reduction of principal and interest, if any made; the name of the person to whom the reduction was granted, and the manner in which he claimed the land; the name of the original locatee, and the original price of the land; the name of the valuator or inspector; the date of the valuation; copy of the Order in Council, or other authority (except the Act under which the reduction was made).

No. 51 .... Copies of correspondence and papers relating to the *Peterborough and Marmora* Railway and Mining Company.

No. 52 .... Copies of correspondence and papers relating to the *Port Whitby* and *Port Perry* Railway, subsequent to that printed in Sessional Papers of 1871-2.

No. 53 .... Copies of correspondence and papers relating to the *London, Huron,* and *Bruce* Railway, subsequent to that printed in Sessional Papers of 1871-2.

No. 54 ... Return to an Address presented to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a Return giving the number of Tavern and Shop Licenses issued during 1872, together with the name of the Township, Town and City wherein such licenses were issued, with the number of Licenses issued in each Township, Town, or City respectively within the Province, and the amount actually received by the Government in respect thereof.

No. 55 .... Copies of correspondence and papers relating to the *Port Dover* and *Lake Huron* Railway.

No. 56 .... Copies of Orders in Council appropriating the Railway Fund, subsequent to 27th January, 1873.

No. 57 .... Copies of papers respecting the *Prince Edward* County Railway's application for aid.

No. 58 .... Report of the Commissioner of Agriculture and Public Works for the Province of *Ontario,* on Public Works, for the year 1872.

No. 59 .... Statement of the affairs of the *Streetsville* Plank Road Company, for the year 1872. (*Not printed.*)

No. 60 .... Report of the Council of University College, for the year ended 31st December, 1872. (*Not printed.*)

No. 61 .... Return to an Address to His Excellency the Lieutenant Governor, praying that His Excellency will cause to be laid before the House, a statement showing:—

1. The number and concession of the several lots granted to the *Elgin* Association, in the Township of *Raleigh,* County of *Kent.*
2. The price originally agreed to be paid for each lot.
3. The amount actually paid and the times of payment.
4. The amount of principal and interest remitted to the said association.
5. Copies of all petitions, letters and papers to the Government asking for a reduction on the original price of said land.
6. Copies of all Orders in Council relating to the same.

No. 62 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House:—

1. Return of the names of all the persons to whom patents have been issued in the Townships of *Hagarty, Jones, Sherwood, Richards* and *Burns*, with the dates of the said respective patents.
2. The names of all persons to whom sales of lots in the said Townships have been made by the Crown, with the dates of said sales. (*Not printed.*)

No. 63 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a statement, under oath, to be furnished forthwith, under section eighteen of 13 and 14 *Victoria*, chap. 144, relating to the *Elgin* Association.

No. 64 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return from the Clerk of each County Court, shewing how many Civil Causes have, since the passage of the Law Reform Act of 1868, been tried in each year in this Province, at the various sittings of Assize and Nisi Prius, and at the various sittings of the County Court, for trials and assessments; distinguishing in such return between causes which have been tried by juries and those which have been tried by a judge; also showing how many causes have been tried before the Judges of the several County Courts, sitting to try causes without juries. (*Not printed.*)

No. 65 .... Copies of correspondence and papers relating to the *Credit Valley* Railway Company.

No. 66 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Exeellency will cause to be laid before the House, a statement shewing:—

1. The whole amount expended in each County for the administration of Criminal Justice, distinguishing the amount paid in connection with the common gaol from the rest of such expenses.
2. The whole amount received from the Government in each County, distinguishing the amount paid for the support of the gaol from the amount paid for other purposes
3. The amount paid to Sheriffs, Clerks of the Peace and Constables respectively, by Government; also, the amount paid by the County.
4. The number of lock up houses in each County, and the amount paid for the erection thereof.
5. The amount paid for the maintenance of the several lock-up houses in the respective Counties, including the salaries of the several keepers thereof.

No. 67 .... Copy of a Despatch from the Right Honourable the Secretary of State for the Colonies, covering a copy of a letter from the Adjutant-General to the Forces, in reference to the Ceremonies to be observed in the different Provinces of the Dominion at the opening and closing of the Legislature, and on other State occasions.

No. 68 .... Statement of the receipts and expenditures, assets and liabilities of the *Hastings* Mutual Fire Insurance Company, for the year ending 28th February, 1871. (*Not printed.*)

No. 69 .... Statement of the affairs of the Economical Mutual Fire Insurance Company of *Berlin*, for the year 1872. (*Not printed.*)

No. 70 .... Statement of the affairs of the *South Easthope* Farmers' Mutual Fire Insurance Company for the year 1872. (*Not printed.*)

No. 71 .... Return of the *Ontario* Mutual Life Assurance Company for the year ending December the 1st, 1872. (*Not printed.*)

No. 72 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all correspondence between any member of the Executive Council of this Province and the Council of Public Instruction, the Chief Superintendent of Education, or other Member of the Council, since the passing of the Act, 35 *Victoria*, chap. 30, making temporary provision as to the regulations of the Council of Public Instruction, and since the date of the last return from the Education Department. (*Not printed.*)

No. 73 .... Statement of the affairs of the *Waterloo* County Mutual Fire Insurance Company, for the year ending 12th November, 1872. (*Not printed.*)

No. 74 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return of the names and residences of all persons appointed by the Government since December 21st, 1871, as Land Valuators; the date of their several appointments, and the fees and emoluments paid or to be paid such Valuators for their services

No. 75 .... Return to an Address to His Excellency the Lieutenant Governor, praying that His Excellency will cause to be laid before the House, a return of the amount realized from Lumber Dues, Sales of Timber Limits, and Licenses, and all other charges or revenue arising from Timber and Lumber in the *Muskoka*, *Parry Sound*, and *Algoma* Districts, respectively, collected and carried to the Revenue Account of the Province (*Canada* and *Ontario*), from the 1st of January, 1863, to 31st December, 1871; and designating the amounts collected from the several Townships therein respectively.

No. 76 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House,

1. A copy of the Order in Council passed on the 29th day of June, 1872, authorizing the sale of Timber on lands on the North Shore of Lake Superior at fifty cents per acre.
2. A copy of the advertisement, or notice to the public of such Order in Council.
3. A statement shewing when said notice was first published in the *Ontario Gazette*, and the names of any other newspapers in which the same was published; together with the date of the first publication in each paper.
4. A copy of each application made to the Crown Land Department to purchase land, or timber on lands affected by said Order in Council, together with the plan or description attached to or accompanying such application; the names of the applicants, the date of purchase, the amount paid, and the date of carrying out the sale.
5. The report of the Surveyor employed to lay out the Townships of *Blake*, *Crooks* and *Pardee*. (*Not Printed.*)

No. 77 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all correspondence which has passed between the Dominion Government and the Lieutenant-Governor of *Ontario*, respecting the disallowance of any Acts of the Legislature of this Province, or the repeal of any Acts of this Legislature, on the ground that these Acts were unconstitutional.

No. 78 .... Return to an Address to His Excellency the Lieutenant Governor, praying that His Excellency will cause to be laid before the House, a return from the

Clerk of each County Court shewing,

1. The number of petitions filed in each such Court for the partition and sale of Real Estate under the Consolidated Act of *Upper Canada*, chapter 86, and the Statute of *Ontario* 32 *Victoria*, chapter 33, and the number of cases in which sales have been made.
2. The number of suits in which the interest of infants, absent, and lunatic parties, in such real estate were sold.
3. The securities taken, and amounts paid into Court, or invested in what securities under each of the said Acts, or any statements, or explanations, regarding the non-payment into court, or non-investment of such securities.
4. Statement of moneys, bonds, mortgages or investments, published pursuant to the 39th section of the Consolidated Statutes, and the 42nd section of the said *Ontario* Statute. (*Not Printed*).

No. 79 .... Copies of Orders in Council relating to the Railway Aid Fund.

No. 80 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return, in tabular form, of the fees received by all the Sheriffs, Clerks of the Peace, and County Crown Attorneys in this Province, for the year 1871; shewing and specifying,

1. The nature of each class of services performed;
2. The number of each particular class performed during the year;
3. The rate charged for each description of service so performed;
4. The authority under which the charge is made for each service;
5. The whole amount of fees received or receivable by each, for, or in respect of his official services; and
6. How much thereof received from the Government, how much from the County, and how much from parties respectively. (*Not Printed.*)

No. 81 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, a return shewing the amount for which the *Port Hope* and *Rice Lake* Gravel Road was sold by the Government of the late Province of *Canada* to the Town of *Cobourg*, the condition of sale, the amount paid on account, and the balance due; also, a statement of the revenue derived by the Town of *Cobourg* from the said Road since the date of purchase. (*Not Printed.*)

No. 82 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House,

1. Copies of all Contracts of Sale;
2. Of all Orders made by any Commissioner of Crown Lands;
3. Of all Petitions and Reports,
4. Of all Assignments of Contract;
5. Of all Orders in Council;
6. Of all letters from *Rufus Stephenson*, or any other persons, to the Commissioner of Crown Lands, respecting lots 14 and 16 in the ninth concession of the Township of *Tilbury East*.

No. 83 .... Copies of Orders in Council relative to the Railway Aid.

No. 84 .... Return to an Address to His Excellency the Lieutenant-Governor, praying that His Excellency will cause to be laid before the House, copies of all Orders in Council since January 1st, 1871, relating to the Free Grant Territory; also, the number of lots located, and the number of settlers who have settled in the several Townships of said territory. (*Not Printed.*)

ANNUAL REPORT

OF THE

Commissioner of Agriculture and Public Works

FOR THE PROVINCE OF ONTARIO,

ON

AGRICULTURE AND ARTS,

FOR THE YEAR 1872.

Printed by Order of the Legislative Assembly.

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ANNUAL REPORT

OF THE

Commissioner of Agriculture and Public Works

FOR THE PROVINCE OF ONTARIO

ON

AGRICULTURE AND ARTS,

FOR THE YEAR 1872.

To His Excellency the Honourable WILLIAM PEARCE HOWLAND, *Companion of the Most Honourable Order of the Bath, Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR EXCELLENCY—

I have the honour to submit to Your Excellency the following Report of the proceedings of the Bureau of Agriculture and Arts for the year 1872.

It is a source of sincere gratification to be able to congratulate your Excellency on the continued prosperity of the Province, and indeed of the Dominion of which Ontario constitutes so important a part. The remarkable advancement made since the confederation of the North American Provinces owing allegiance to the British Crown, in all the essential elements constituting the wealth and happiness of a people, is pregnant with the most cheering hope for the future, and which cannot fail to inspire the heart of every true Canadian with the love of, and confidence in, his native or adopted country.

With reference to the harvest of the past year I regret that so large a number of agricultural societies failed to make their returns as desired in the circular issued from my department early in the fall. As no answers have been received from several of our best counties, it is not improbable that the average may have been somewhat higher than what is indicated by the limited returns in Appendix H. It is, however, unquestionable that in some of our districts most prolific in the production of winter wheat, that important crop was a comparative failure. The previous summer and fall having been in some sections of the Province remarkably dry, a favourable seed-bed could not be obtained; germination became slow and feeble, and the young plants in great measure failed in so developing their roots as to give

them a firm hold of the soil. This state of things was followed during the winter by high winds driving off the snow from exposed surfaces, that the plants completely perished and the land had to be ploughed and subjected to spring cropping. The past season has afforded additional and striking proof of the importance of shelter to winter wheat in this climate, for wherever the crops were protected by trees on the north and west, but very little injury was sustained. The reservation of our native trees for shelter and economic uses, and the salutary influence thereby produced on climate, particularly as relating to temperature and rainfall, is certainly beginning to assume an importance which few other questions belonging to practical agriculture can legitimately claim.

Agricultural and Arts' Association.

The facts summarised in Appendix B demonstrate the constant and healthy progress of this Association, whose annual exhibitions for more than a quarter of a century have evinced a power of inherent development so as to secure an uninterrupted advancement. The Provincial Shows will of course vary somewhat from year to year, as to extent and income, arising out of local circumstances connected with the places in which they are held. Hitherto the exhibitions have been held in four different places in regular succession, and, without exception, each display as it came round to the same locality after an interval of four years has proved decidedly superior to its predecessor. It is also particularly encouraging to find that not only has the quantity of the material composing these exhibits been constantly augmenting, but that the *quality*, the surest criterion of progress, has, at least, made equal progress. Live stock of a character that in the earlier history of the Association was sent in great force to the exhibitions, has had but few representatives of late years, and this remark will apply, more or less, to the various departments of this annual exposition of the general industry of the Province. It is admitted by competent judges, both at home and abroad, that our Provincial Shows, for the extent and quality of the articles exhibited are unsurpassed on this continent, and are fast approaching similar institutions in the older and wealthier countries of Europe. The Council of the Association has just published a second volume of "The Canadian Short-Horn Herd-Book," another unmistakeable sign of progress, and the Secretary is preparing for the press a succinct summary of its proceedings down to the present time.

Agricultural Societies.

By referring to a synopsis of the proceedings and financial condition of these numerous organizations. (Appendix A) it is satisfactory to observe among many of them evident signs of progress, while others appear to be in a stationary, and a few, perhaps, in a retrograde condition. It is obvious from a careful comparison of their reports for the past few years that an increasing interest is being generally felt in the exhibitions of those societies which are under a judicious and energetic management. The practice now fast becoming general, in the larger societies at least, of paying more attention to system and convenience in arrangements for exhibitions, with a small charge for admission, has already been productive of the best results, imparting a more orderly character and efficient management to the shows, and in all instances augmenting more or less the receipts.

There is evidently being felt a growing desire for larger exhibitions, in which increased competition and more liberal prizes naturally tend to elicit a healthy spirit of rivalry, and thus more effectually promote the improvement of the various industries embraced by these institutions. The public are beginning to feel, not perhaps that we have too many agricultural societies, but certainly too many exhibitions. Every well settled township has, if the people are united, the means of sustaining a useful society for the promotion of agriculture and other industrial arts, by lectures, discussions, &c., and a few are so situated as to get up useful and creditable exhibitions. In most instances, however, a wider area than that comprised in a single township is necessary in order to secure sufficient material for a respectable show, and to attract a healthy competition and large numbers of observant visitors. Keeping this object in view it is encouraging to find that "Union Shows," comprising two or more counties, or townships, are steadily, if not rapidly advancing, and the continued increase of success which has now for several years characterised the district exhibitions of London, Hamilton and Guelph, to say nothing of many smaller union shows, affords a good and much needed practical illustration that "union is strength." The improvements constantly taking place in common roads, and especially the extension of railways, which are beginning to permeate all parts of the country, render it already comparatively easy to get up large shows in places where it would, a few years since, have been wholly impracticable.

The number of "Farmers' Clubs" referred to in the agricultural reports is, I regret to observe, very small; still it is a hopeful sign that a few are in active operation and doing a good and much needed work in quickening the agricultural mind and preparing our young men for the better and more successful prosecution of their noble and indispensable pursuit; thereby making them better farmers and more useful citizens. It is indeed much to be desired that the members of township societies, at least, should adopt such measures as would secure the principal advantages of Farmers' clubs, by holding periodical meetings, especially during the comparative leisure of winter, for the interchange of thought, comparing experience and the discussion of all questions relating to the theory and practice of an advancing agriculture.

Mechanics' Institutes.

The number of institutes that received aid the past year from the Legislative grant was 41, or about the same as in the previous year. As some of the requirements of the statute have in several cases not been clearly understood, a number of reports were sent back for revision, the whole of which were not returned to the Department in time for insertion in this Report. The amendments made to the Act last session have already been productive, to some extent, of beneficial results, and as the law becomes better and more fully understood by the managers, and the inspectors obtain more experience in their work, there is a prospect that all these societies will speedily be brought into a satisfactory condition in working under the provisions of the statute.

It cannot be felt otherwise than as a matter of regret that as yet so few of these institutes have regular evening, classes for the special instruction of working mechanics in those subjects which have most important relations to their several industries. As our public schools improve and extend, less necessity will be felt for instruction being given in mechanics' institutes in the mere rudimentary branches of secular knowledge, and more favorable opportunities will be presented for meeting in a more efficient and practical manner than obtains

at present, the special and higher wants of all the different classes of artisans. The numerous meetings, mostly of a popular, literary, and musical character, that have been so attractive of late years in most of our towns and villages, have unquestionably operated against the success of regular lectures, as formerly given in mechanics' institutes, as we find from their reports but little reference to this mode of giving scientific and literary instruction. It is true that several institutes have given during the past year a few popular entertainments of a pleasant and agreeable character, which no doubt tended in some degree to improve the taste, and promote a good social feeling among the members; but systematic lectures, or, indeed, oral instruction in any form of a strictly scientific character, do not appear at present in much accordance with the felt wants and wishes of the people.

We must look principally to the libraries which these institutes are forming, and the classes, which, however slowly, they may be establishing, as their chief functions for eliciting a desire for useful knowledge among the masses, and for satisfying such desire when happily it shall become generally felt. As the law requires that the whole amount of the grant, with that of the subscription on which it is based and proportioned, shall be expended in class instruction, or for books relating to the most useful and important departments of human knowledge, there can be no reasonable ground for doubt that the zealous and persevering prosecution of those objects must sooner or later meet with large measures of success. It will require a watchful care in fostering the best interests of these organizations, that, in the smaller populations especially, they do not degenerate or rise higher than mere reading rooms, for the supplying chiefly a shallow and sensational literature, that is inimical alike to sound knowledge and to morality, and which unhappily there is too much reason to fear, amidst not a little that is healthful and elevating, is a growing characteristic of the present age.

It will appear by referring to the Report of The Association of Mechanics' Institutes, (Appendix B) that the Executive Committee devoted earnest attention during the past year to the consideration of measures calculated to promote the efficiency of the various Institutions connected with the Association. An elaborate programme of studies and examinations has been submitted to all the affiliated Institutes; which, when carried into practical effect, will be found very serviceable in stimulating the artisan class in the pursuit and acquisition of useful knowledge. The paper read by the indefatigable Secretary of the Association, Mr. W. Edwards, at the annual meeting, "*On the best method of classification of books in the Catalogues and on the shelves of Mechanics Institutes' Libraries*," being the result of much observation and experience, will be found of great utility to all persons having the management of circulating libraries.

Fruit-Growers' Association.

It will be seen from the Report of this Society (Appendix D) that it continues to make steady or rather rapid progress, its membership having largely increased during the past year, amounting at present to near two thousand. One feature of the movement is particularly encouraging; the constantly enlarging area of the Society's operations, not being now practically confined to the most favorable fruit regions of the Province—the south-western peninsula—but pushing its work through all the older settled districts, and even beyond, to places which have only recently resounded with the woodman's axe, except, perhaps, for lumbering purposes.

With this tendency to enlargement, the Association is doing an important and much needed work both in the older and newer districts of the country. In the more northern sections, where the raising of fruit has hitherto been regarded as all but impracticable, the dawn of a better state of things may be regarded as about commencing, and as the Association pushes its inquiries into, and obtains information from, the counties and townships in the rear, there can be no reasonable doubt that the more hardy kinds of fruit, under suitable culture and protection by planting, will, by degrees, be successfully introduced. The practice adopted the last few years of sending specimens of fruit-trees to all the members, for the purpose of ascertaining what particular varieties are best adapted to different localities, will shortly afford some reliable data for resolving the most difficult problems of this very important branch of horticulture. In this way the Society is introducing what has long been felt as a desideratum, a system that will bring to a practical test the varieties of fruits that can be safely recommended as adapted to the varying conditions of all sections of the Province. Already an increasing interest is being felt in most of the older districts relative to fruit-culture, and large quantities of superior apples are annually exported to the Eastern Provinces and States, and also to Britain, affording a considerable amount of revenue. It has now become a matter of demonstration that a much larger area of the Province than has heretofore been considered, is in point of soil and climate, well adapted for the successful cultivation of many of the more valuable kinds of fruits, including the grape ; and in the more northerly portions of country, there is good ground for hope that this luxury, if not necessary, of life, will ultimately be raised in sufficient amount to meet at least all local necessities.

The President's admirable Address on the Culture of the Pear will be widely read with interest and profit, and among other valuable contributions, the report on the numerous and carefully conducted experiments by Mr. Saunders, in the interesting and delicate practice hybridizing, will attract much attention from the more advanced horticulturists, both in the Old World and in the New.

Entomological Society.

In the report of this Society (Appendix E) the general reader will find matter of interest and much that to the farmer and gardener is of special importance. As these reports appear year by year, the cultivators of grain, fruits, &c., may make themselves readily acquainted with the forms and habits, both of their friends and enemies in the insect world, and such knowledge cannot fail to be of great practical value. Indeed, it is only in this way that the cultivators of the soil have any chance of preventing, or even mitigating those disastrous calamities which every now and then befall their crops, sometimes involving individual ruin, and always producing a serious national loss. Fortunately our grain crops suffered very little during the past season from the depredations of insects; but much anxiety was naturally felt at the advent of the Colorado Potato Beetle the previous year, and the damage done, particularly in the western section of the Province, has already been of sufficient extent to awaken very general fears for the future. Although the mischief actually inflicted has not as yet proved so great as was at one time anticipated, arising, perhaps, from an increase in the number of the natural enemies of the Beetle, or from favourable climatic changes, or from causes at present wholly unknown, there is unhappily too much reason to fear more wide-spread damage during the

ensuing season. The insect is evidently steadily moving eastward, having already reached some of the central sections of Ontario, so that all cultivators of the potato would do well to keep a timely look out, and attend to precautions and practical measures for arresting its progress and mitigating its ravages, such as have been pointed out and recommended by the Society. In cases where this was done the past season, the results were generally satisfactory.

At present Entomology is but a young science in Canada, and has but few practical and earnest cultivators. The number, however, is increasing ; a circumstance that may be legitimately traced to the organization of the Entomological Society and the information diffused through its excellent periodical, and the valuable reports that have been forwarded to this Department. It must be gratifying to our people to be assured that the labours of the Entomological Society, as well as those of the Fruit-Growers' Associatition, as embodied in their reports have elicited many laudable notices in several of the leading scientific journals, both of Europe and America.

Veterinary College.

From the mention made of this institution in the report of the Council of the Agricultural and Arts' Association, (Appendix B) it is satisfactory to find that it continues to make steady progress under the efficient management of Principal Smith and his coadjutors. The students continue to increase in number, and the curriculum of study has been gradually enlarged. The literary attainments of candidates have of late been of a higher order, and the examinations for the diploma more thorough and extended. It is satisfactory to be assured that the students generally after obtaining their diploma, find ready and profitable employment in Ontario, and a few have obtained good positions in some of the neighbouring States. As the number and value of our Live Stock are constantly increasing, no doubt can be felt that there will continue to be in the future a steady demand for the services of properly qualified Veterinary practitioners.

Thirty first-year's students entered the college in January last, who are attending, in addition to strictly professional subjects, an extended course of lectures by Professor Buckland on the scientific principles of Agriculture, including the breeding and management of the domesticated animals. Believing that such instruction would contribute to the usefulness of the young men when they go into the country to practise their profession, I have agreed to give a prize, in connection with two others offered by the Council of the Agricultural Association, to the three students that pass the first, second, and third best examinations in all the subjects.

Live Stock.

The farm animals of this Province, with a single exception, have been free from any of those serious diseases which have been so destructive in several countries of Europe, and not entirely unknown to some portions of the American Union. Through the severe drought which prevailed in a large portion of Ontario, and the consequent deficiency in hay and turnips, farmers have suffered considerable loss, but happily our flocks and herds may be generally regarded, if somewhat low in condition, as sound and healthy; and this very important branch of rural economy is constantly progressing: the market prices of wool and butchers' meat make the raising and fattening of stock, when conducted with perseverance and judgment, the most profitable department of Canadian Agriculture. It is encouraging to find the number of breeders of pure stock steadily increasing, and that Canadians have become well known in Britain as

purchasers of the best and highest priced animals. The increasing business that is being done in this line with the different States of the American Union, some of them the most distant, is a sure indication of the high character and ability of our breeders, and augurs well for the future.

The Epizootic which so suddenly attacked horses in the end of September last, and spread with unparalleled rapidity over a large portion of this continent was supposed to have originated in the immediate vicinity of Toronto, or at all events its earliest developments occurred here, and very rapidly became diffused over a large portion of the Dominion and the neighbouring States. From its sudden and wholly unexpected advent, people were taken by surprise, and very great inconvenience was felt in various branches of business both in town and country, from the inability of the horse to perform his ordinary work, affording a good practical illustration how much society owes to the important and indispensable services rendered by that useful and noble animal. Fortunately the most pressing work of the farm was about completed before this disaster made its appearance, or the consequences of not being able to perform the sowing of wheat and other necessary operations would have been most disastrous. Considering how wide-spread was the epidemic, having the symptoms of a malignant catarrhal fever, rapidly prostrating the vital forces of the animal, the number of fatal cases, where proper care was exercised, was very small; and almost all instances of fatality might be traced to neglect and to subjecting the animals to continued work. It is satisfactory to know that our Veterinary College has already turned out a number of competent practitioners in various parts of the country capable of grappling, as far as the present state of knowledge admits, with diseases of this recondite character, and their services on the late occasion were both opportune and beneficial.

It would seem from the history of the domesticated animals in the old world that many of them, from close breeding and the high artificial treatment to which they have, particularly of late years, been subjected, are liable to new or modified types of disease requiring the keenest observation and skill in their treatment. We shall probably experience more of this sort on this side the Atlantic as our animals increase in numbers, improve in quality, and are placed and fed under more artificial conditions. Hence the importance of disseminating far and wide, among our rural population especially, sound and practical information on the many intricate questions relative to the breeding, diseases and management of live stock.

Professor Law, of Cornell University, N. Y., who has been authorised by the Federal Government at Washington to investigate the nature and spread of the recent horse epidemic has corresponded with my Department on the subject, and it is much to be desired that from the information afforded him by Principal Smith and the Director of the Magnetical Observatory relative to the outbreak and spread of the disease in Canada, and the conditions of the atmosphere, will assist him in the preparation of a report which will be looked forward to with no ordinary interest, and that some degree of light, at least, will be thrown upon a subject confessedly difficult and obscure.

An increased interest has been evinced of late years relating to POULTRY, to the awakening of which the "Ontario Poultry Association," with minor societies of a kindred character has doubtless largely contributed. Already a marked improvement in the various kinds of poultry has been achieved; new and improved breeds have been introduced and tested as to their adaptability to our wants and climate; and by directing earnest attention to this move-

ment, the comforts of the people, and even the material wealth of the country will be considerably increased. With a view of supplying what has long and extensively been felt as a common want—plain and practical directions as to the breeding and management of poultry adapted to the condition and requirements of Canada,—I have procured from a gentleman who has devoted long and special attention to this subject, and edited a very useful periodical relating thereto, a report (Appendix F), which I trust will be found both interesting and practically useful in this attractive department of rural economy.

Canadian Dairymen's Association.

This society originated in the western portion of the Province, with its headquarters at Ingersoll, and has been eminently successful. The last annual report issued by the Association is replete with interesting and useful information, particularly in relation to the manufacture of cheese. The co-operative system of cheese-making is annually extending over large areas of the Province, and this valuable product is being exported in larger quantity and of greatly improved quality every year, producing a revenue of great and increasing value. It is much to be desired that the article of butter should receive similar attention to that which has been so successful in the improvement of cheese, and it should always be kept in mind that in dairy products especially, the profits and success, whether in the home or foreign market, will always bear a strict relation to the *quality* of the article offered.

Another organization of this nature has recently been established under the designation of "The Ontario Dairyman's Association," with its headquarters at Belleville. This society promises to do for the eastern section of the Province what its predecessor has so well done for the western, and the number of cheese factories which its union embraces is already considerable, and some of them have very extensive operations.

Estimating very highly the value of the dairy interest, which admits of great extension and may be made highly conducive to the amelioration of land (of which we have too much, the productive powers of which have been much weakened by too frequent cropping with grain) I have felt it to be both a duty and a pleasure to afford legislative aid to these Associations. In some respects it appears to be desirable that these two societies should amalgamate so as to form one Incorporation for the whole Province; and accordingly a Bill will be introduced to amend the Agricultural and Arts' Act, one of the objects of which is to effect this Amalgamation.

Agricultural College and Experimental Farm.

Shortly after the present Government came into office, doubts began to be expressed by several parties interested in the progress of Agricultural Education, that the site and lands chosen and purchased by their predecessors, were not in several respects well adapted for the purposes of an Agricultural College and Experimental Farm; and it was argued that more eligible situations and better soil might be selected in different sections of the Province. Feeling the vast importance of the project, and how much would depend on procuring the most suitable situation and soils for the carrying it into effect, I considered it to be my duty, in the interest of the public, after mature deliberation and consultation with my colleagues, to have a thorough investigation made, by parties of unquestionable competency, of the lands purchased at Mimico, that the public mind might be satisfied that so new and important a

project might make as favourable a commencement as possible, and its ultimate success made, as far as human agency could do so, morally certain. I naturally turned to the Council of the Agricultural and Arts Association for assistance in prosecuting the investigation, and also authorized Professor Miles, of the Michigan Agricultural College, and a number of the most experienced practical agriculturists in the Province, to make a searching examination as to the site, character of the soil, and water supply of the above lands; the Reports of these gentlemen will be found in Appendix ( ). After exercising all the care and attention I could give to so grave a subject, with the results of the investigations of the most competent judges that I could summon to my aid, it will be my duty to submit the whole to Parliament, with a view of the final disposal of the matter; and I most fervently hope that such measures will be agreed on, as will best promote the true interests of the projected institution and the welfare of the country.

CONCLUSION.

The difficulties which have been experienced in this Province for several years past, in obtaining the necessary amount of working people, especially farm labourers and female domestic servants, there is good reason to hope will, by degrees, become lessened. The immigration during the last year has not only increased in amount, but also improved in quality; and from the increased exertions now making by the Government, aided by voluntary societies which are being formed in different sections of the Province, there can be no reasonable doubt that the ensuing season will witness still greater numbers coming to our shores, who, by the exercise of sobriety and industry, will greatly improve their condition, and contribute largely to the wealth and prosperity of the country.

Respectfully submitted,

ARCHIBALD McKELLAR,

Commissioner.

BUREAU OF AGRICULTURE AND ARTS,
February, 1873.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (A).

ANALYSIS OF REPORTS OF AGRICULTURAL AND HORTICULTURAL SOCIETIES FOR 1871.

ANALYSIS OF REPORTS

OF

Agricultural and Horticultural Societies,

FOR THE YEAR 1871.

ADDINGTON.

Dr.	$ cts.	$ cts.	$ cts.
To balance in hand	19 89		
" 109 Members' Subscriptions	116 00		
" Legislative Grant	700 00		
			835 89
Cr.			
By Prizes for Live Stock	165 75		
" " Field Products	44 25		
" " Dairy	14 50		
" " Horticultural Products	12 75		
" " Agricultural Implements	79 75		
" " Arts and Manufactures	58 50		
		375 50	
" L. G. to Township Societies		350 00	
" Working Expenses		68 34	
			793 84
Balance in hand			42 05

Camden.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		11 06	
" 72 Members' Subscriptions		115 00	
" Legislative Grant		138 22	
			264 28
Cr.			
By Prizes for Live Stock	128 50		
" " Field Products	26 75		
" " Dairy	9 75		
" " Horticultural Products	6 75		
" " Agricultural Implements	44 50		
" " Arts and Manufactures	34 25		
		250 50	
" Working Expenses		23 00	
			273 50
Balance due Treasurer			9 22

Loughborough.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 18	
" 59 Members' Subscriptions		59 0	
" Legislative Grant		74 82	
			136 00
Cr.			
By Prizes for Live Stock	48 75		
" " Field Products	4 10		
" " Dairy	6 00		
" " Horticultural Products	4 50		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	12 30		
" " Ploughing Match	11 25		
" " Growing Crops	20 25		
		117 15	
" " Working Expenses		26 55	
			143 70
Balance due Treasurer			7 70

Portland.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand	13 64		
" 57 Members' Subscriptions	51 00		
" Legislative Grant	67 21		
		131 85	
Cr.			
By Prizes for Live Stock	56 60		
" " Field Products	10 10		
" " Dairy	1 30		
" " Horticultural Products	1 20		
" " Agricultural Implements	4 20		
" " Arts and Manufactures	29 90		
		103 30	
" " Working Expenses		20 44	
			123 74
Balance on hand			8 11

Sheffield.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand	12 40		
" 55 Members' Subscriptions	55 00		
" Legislative Grant	69 75		
			137 15
Cr.			
By Prizes for Live Stock	66 25		
" " Field Products	10 60		
" " Dairy	3 75		
" " Horticultural Products	2 00		
" " Agricultural Implements	19 75		
" " Arts and Manufactures	19 95		
	122 30		
Unpaid	3 00		
		119 30	

By Working Expenses		11 00	
			130 30
Balance in hand			6 85

ALGOMA.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		80 93	
" 59 Members' Subscriptions		107 00	
" Admission to Shows		2 37	
" Legislative Grant		321 00	
" Miscellaneous Receipts		20 25	
			531 55
Cr.			
By Prizes for Live Stock	54 50		
" " Field Products	32 50		
" " Dairy	14 50		
" " Horticultural Products	4 00		
" " Arts and Manufactures	24 50		
" " Ploughing match	16 00		
		146 00	
" Exhibition Buildings		298 36	
By Working Expenses		81 50	
			525 86
Balance in hand			5 69

BRANT, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		615 29	
" 247 Members' Subscriptions		277 00	
" Admissions to Show		401 75	
" Legislative Grant		700 00	
" Municipal Grant		100 00	
" Miscellaneous Receipts		51 00	
			2145 04
Cr.			
By Prizes for Live Stock	577 00		
" " Field Products	54 25		
" " Dairy	26 75		
" " Horticultural Products	56 25		
" " Agricultural Implements	54 50		
" " Arts and Manufactures	67 25		
" " Ploughing Match	10 00		
	846 00		
Unpaid	77 75		
		768 25	
By Prizes for previous year		59 50	
" Legislative Grant to Township Societies		266 00	
" Insurance		7 00	
" Working Expenses		306 55	
			1407 30
Balance in hand			737 74

REPORT.

* * * * *

During the past year the Provincial Agricultural Association decided to have an Exhibition for the Trial of Implements, and your directors were successful in having the Exhibition held at Paris, on the farm of Hiram Capron, Esquire, who kindly granted a part of his farm for the use of the Exhibitors, who came from all parts of the country to show their various manufactures. Many people from a distance, who were interested in such matters, were present, and had ample opportunities to form an opinion of the capabilities of the different machines upon the grounds.

The Annual Exhibition was held on the 12th and 13th days of October, and in spite of the numerous shows which had previously taken place in all parts of the country, causing a falling off in the number of visitors, was very successful. The entries were not so numerous as in former years, but the excellence of the stock, produce, and manufactures on the grounds and in the hall made ample amends for any deficiency in quantity.

The show of matched horses and single carriage horses was very creditable.

Owing probably to the increase of premiums, the exhibitors of horned cattle far excelled that of 1870. Our farmers are evidently waking up to the importance of procuring and raising the best breeds and most valuable kinds of stock. In fact, quite a rivalry in this respect seems to be springing up amongst our cattle breeders.

There was an excellent show of sheep and pigs. Of poultry there was a great variety, and the specimens were superior, attracting considerable attention. The Horticultural Department was not as good as it might have been, if the Exhibition had been held some weeks sooner, and an amalgamation effected with the Horticultural Society, whose products would, if exhibited, have added greatly to the attractions of the Floral Hall.

Your Directors have reason to fear that, in a few instances, deceptions have been practised by unprincipled exhibitors, and are of opinion that in future any person exhibiting articles in the wrong class, and representing them to be what they know they are not, should not only forfeit his premium, but be expelled from the society altogether. Liberality in the awarding and payment of premiums is recommended, but the practice of exhibiting borrowed articles, as your Directors have reason to believe has occasionally been done, cannot be too strongly condemned.

The following new cereals, fruits, and vegetables have been tried, and are very highly spoken of by several of our best farmers and gardeners, who have raised them upon certain soils and under certain circumstances, viz.. Norway and Surprise Oats, Nos. 3 & 9 of Arnold's Hybrid Wheat; Downing's Gooseberry, Roger's Nos. 3, 4, & 15; Othello and Canada Grape, Climax and Peerless Potato.

* * * * *

Onondaga.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		13 37	
" Members' Subscriptions		80 50	
" Admissions to Show		4 09	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
			267 96
Cr.			
By Prizes for Live Stock	145 00		
" " Field Products	25 50		
" " Dairy	12 50		
" " Horticultural Products	3 50		
" " Arts and Manufactures	22 00		
" " Ploughing Match	31 00		
		239 50	

	$ cts.	$ cts.
By Working Expenses	14 00	
	———	253 50
Balance in hand		14 46

NOTE:—The Directors speak of a gradual improvement of Live Stock, particularly of cattle and sheep, in the Township. There were 12 competitors at the Ploughing Match, and a large number of visitors evinced much interest in the proceedings. Considering the hard and dry state of the ground the character of the work performed was very creditable.

Paris Horticultural Society.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		234 44	
" Members' Subscriptions		42 00	
" Admissions to Show		51 47	
" Legislative Grant		126 00	
" Municipal Grant		25 00	
		———	478 91
CR.			
By Prizes for Fruits	18 75		
" " Plants and Flowers	33 00		
" " Vegetables	17 25		
	———	69 00	
" " Arts and Manufactures		23 50	
" " Working Expenses		47 95	
		———	140 45
Balance in hand			338 46

NOTE:—In consequence of the severe drought, and the North Brant Agricultural Society holding its show in Paris, it was deemed advisable to suspend a fall Horticultural Exhibition. The spring show comprised 272 entries, and "on the whole the Exhibition was a good one, the flowers were superior in quality to any previous display." Vegetables and small fruits were also above the average.

BRANT, SOUTH.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 34	
" Members' Subscriptions		345 00	
" Admissions to Show		672 67	
" Legislative Grant		700 00	
" Municipal Grant		100 00	
" Miscellaneous Receipts		181 00	
		———	2001 01
CR.			
By Prizes for Live Stock	437 75		
" " Field Products	68 00		
" " Dairy "	35 75		
" " Horticultural Products	67 00		
" " Agricultural Implements	80 00		
" " Arts and Manufactures	92 50		
" " Ploughing Match	10 00		
	———		
	821 00		
Unpaid	33 00		
	———	788 00	

	$ cts.	$ cts.
By L. G. to Township Societies	280 00	
" Preparing Show Grounds	129 28	
" Prizes of Previous Year	11 50	
" Agricultural Publications	12 85	
" Working Expenses	276 70	
		1498 33
Balance in hand		502 68

REPORT.

In the early part of the season your Directors lost by death their very efficient Secretary Mr. Duncan McKay, and still more recently Mr. Geo. Peatman, Vice president; both of these gentlemen were so well and favourably known to you all that it is needless on our part to recapitulate their many merits: yet we cannot allow the valuable services of these gentlemen to pass without notice. Of Mr. McKay it is recorded in the minutes of the society, passed at the first meeting of the Directors after his decease, that, "In every movement affecting the interests of this society, of which he has been the efficient Secretary for the past nine years, he has always taken a lively interest, and we hereby gratefully acknowledge the large measure of success which has attended his labours in connection with the South Brant Agricultural Society. To the strong bond of attachment which ever existed, not only between him and the Board of Directors, but the general public also, and to his zeal and unwearied labours the Society is indebted for the prosperity and usefulness which have always attended it; and our prayer to God is, that this affliction may be sanctified to us, as well as to the bereaved family, with whom we cordially sympathise by affectionately commending them, under their heavy trial, to the Father of mercies and the God of all consolation."

And of the late Mr. Peatman we can only repeat the same words, as he also was personally identified with nearly every proceeding of importance in connection with this Society for many years past.

* * * * *

The Annual Fall Exhibition was held on the fifth and sixth of October, and was in many most important respects very successful, more especially in horses, cattle, sheep, and grain, all of which were of great excellence; yet there was a lamentable deficiency of articles of manufacture such as are usually exhibited within the Exhibition building.

The quality of the various grains, wheat, oats, barley, and also Indian corn, was of great excellence, and considering the severe drought of the season remarkably fine, being fully equal in quality to any hitherto shewn in the county. The show of roots, especially turnips, was very good, and shewed that the high culture bestowed upon them had effectually defied the drought.

Your Directors are well pleased to be able to notice the completion of the Harrisburg branch of the Great Western Railway, thereby placing us in direct communication with a large section of country to the north and also with the seaboard byway of Lake Ontario and the St. Lawrence, which will doubtless materially influence the prices of agricultural produce to the great advantage of the farmer.

Your Directors would also desire to notice the apathy of the great majority of farmers, in not availing themselves of the services of first class pure bred Durham bulls, in the production of stock, thereby enhancing the value of the herd. Many prefer the service of any sort of bull so long as it is cheap, rather than pay a fair price for the service of a thoroughbred. To such as these we beg to offer a few words of advice. "It may always be taken for granted that a thorough bred bull is of the very greatest benefit to the farmer in raising stock either for the dairy or the butcher. To a person commencing improvement the best advice is to get as good a bull as he can and if he be a good one to use him indiscriminately with all his cows, and when, by this proceeding, which ought to be persisted in, his stock has, with an occasional change of bull, become sufficiently stamped with desirable excellencies, his selection of males should then be made to eradicate defects which he thinks desirable to be got rid of, and he will not fail to keep in view good blood in the males resorted to, for that will give the only assurance that they will transmit their own valuable properties to the offspring. It has been asserted that the milking properties of the old breed of cattle have been sacrificed to the

development of a tendency to accumulate fat; yet experience has gradually established the fact that it is prudent to sacrifice a small portion of the milk, and it has nearly always been found that the best milkers when dried and put up for feeding, make most fat in the shortest time."

* * * * *

Your Directors would also wish to draw your attention to the very great success which has attended the Union Exhibitions of London, Guelph, and Hamilton, and would strongly recommend to their successors to try and secure such an exhibition for Brantford, as if Norfolk, the north riding of Brant, and the east part of Oxford were united with this society for exhibition purposes, a show second to none in the province might easily be established. We have one of the finest grounds in the province, surrounded by as rich an agricultural country as could possibly be desired, and we have no doubt, whatever, of the success of such an exhibition if once fairly established. The large surplus of $5000 said to be held over by London, and another large amount at Hamilton, may well serve to stimulate and encourage the undertaking. We may also add, in regard to this, that if our present building was repaired it would answer all necessary purposes for a few years to come.

Burford.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		48 43	
" 177 Members' subscriptions		181 50	
" Admissions to Show		97 25	
" Legislative Grant		140 00	
" Municipal Grant		200 00	
" Subscriptions		142 50	
" Miscellaneous Receipts		6 00	
			815 68
Cr.			
By Prizes for Live Stock	203 00		
" " Field Products	51 50		
" " Dairy "	12 00		
" " Horticultural Products	10 25		
" " Agricultural Implements	20 50		
" " Arts and Manufactures	49 25		
		346 50	
" " Preparing Show Grounds		55 00	
" " Purchase of Grounds		250 00	
" " Working Expenses		67 63	
			719 13
Balance in hand			96 55

Brantford Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 41	
" 141 Members' Subscriptions		159 00	
" Admissions to Show		130 72	
" Legislative Grant		140 00	
" Municipal Grant		25 00	
" Miscellaneous Receipts		45 00	
			501 13
Cr.			
By Prizes for Fruits	110 75		
" " Plants and Flowers	99 00		
" " Vegetables	109 25		
		319 00	
" " Preparing for Show		24 84	
" " Working Expenses		157 38	
			501 22
Balance due Treasurer			0 09

REPORT.

The Directors of the Brantford Horticultural Society, in presenting the Fourth Annual Report, desire to express their satisfaction at the progress made by the Society during the past year. This progress is evidenced not only by the greatly increased interest manifested in the affairs of the Society on the part of our citizens, but also by the character of many classes of the articles presented for competition and exhibition. While the receipts for admission of non-members to the Society's exhibitions last year reached $118, this year they amount to $130. The receipts for admission to the July exhibition, which in 1868 amounted to $38, and had reached in 1870 $70, have this year increased to over $90, the same admission fee being charged each year, thus showing a steady but rapid growth in public estimation.

Two exhibitions have been held during the year—one on the 3rd of July and the other on the 21st of September.

The very severe drouth which prevailed over this locality during the spring and early summer materially affected our exhibition, held on the 3rd of July, in some of its departments Nevertheless, the exhibition was on the whole probably equal to that of former years, and among Fruits the strawberries and cherries were above the average, there being 29 entries of the former, and 40 of the latter, and most of them being an excellent sample.

The display of products at the Autumn Exhibition was, your Directors believe, both in the Fruit and Vegetable Department, far above that of any preceding year, and not inferior in the Floral Department. At this Exhibition there were no less than 132 entries in apples, 57 in grapes and 32 in pears. And the display in each of these classes for general excellence, your Directors believe, has never been surpassed by any Exhibition in the County.

Our town and the surrounding country has, within the last few years, been gaining a reputation abroad for excellence in their productions of fruit; and, in consequence, a special deputation from the Fruit Growers' Association of Ontario visited our Autumn Exhibition and several of the neighbouring orchards, for the purpose of enquiring into the fitness of the soil and climate, and the character of our fruit productions. The report of the deputation will probably appear in the transactions of that Association.

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BOTHWELL.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		19 00	
" 221 Members' Subscriptions		221 00	
" Admissions to Show		22 00	
" Legislative Grant		700 00	
" Municipal Grant		150 00	
" Miscellaneous Receipts		48 45	
			1,160 45
Cr.			
By Prizes for Live Stock	260 75		
" " Field Products	55 15		
" " Dairy "	12 75		
" " Horticultural Products	11 00		
" " Agricultural Implements	19 50		
" " Arts and Manufactures	60 25		
" " Ploughing Match	32 00		
		451 40	
" " of previous year		46 20	
" L. G. to Township Societies		420 00	
" Preparing Show Grounds		31 15	
" Working Expenses		122 35	
			1,071 10
Balance in hand			89 35

NOTE.—The Spring Show was somewhat inferior, but the quality of the animals was good; and the Fall Exhibition, if not quite equal in magnitude to previous ones, was characterised by the superior excellence of stock, fruit and grains. Crops generally abundant.

Eastern and Dairy.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		30 76	
" 148 Members' Subscriptions		151 00	
" Admissions to Show		21 00	
" Legislative Grant		133 74	
" Municipal Grant		141 61	
			478 11
CR.			
By Prizes for Live Stock	96 75		
" " Field Products	23 90		
" " Dairy "	10 00		
" " Horticultural Products	9 25		
" " Agricultural Implements	13 00		
" " Arts and Manufactures	30 80		
" " Ploughing Match	42 00		
		225 70	
" Preparing Show Grounds		3 75	
" Purchase of Live Stock		200 00	
" Working Expenses		47 11	
			476 56
Balance in hand			1 55

Howard.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		131 38	
" 141 Members' Subscriptions		148 00	
" Admissions to Show		8 00	
" Legislative Grant		129 23	
" Money Borrowed		200 00	
" Proceeds, Sale of Seeds		280 34	
" Miscellaneous Receipts		11 00	
			907 95
CR.			
By Prizes for Live Stock	115 00		
" " Field Products	33 75		
" " Dairy "	4 00		
" " Horticultural Products	11 00		
" " Agricultural Implements	8 50		
" " Arts and Manufactures	37 75		
" " Ploughing Match	16 00		
" " Growing Crops	18 00		
		244 00	
" Preparing Show Grounds		346 72	
" Purchase of Seed		266 05	
" Working Expenses		78 39	
			935 16
Balance due Treasurer			27 21

Oxford.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		71 60	
" Members' Subscriptions		63 50	
" Legislative Grant		45 04	
" Collection for Band		19 70	
			199 84
Cr.			
By Prizes for Live Stock	48 00		
" " Field Product	11 00		
" " Dairy "	3 00		
" " Horticultural Products	4 00		
" " Agricultural Implements	8 00		
" " Arts and Manufactures	16 00		
		90 00	
By Prizes of previous year		20 00	
" Band		20 00	
" Working Expenses		33 14	
			163 14
Balance in hand			36 70

Zone.

Dr.	$ cts.	$ cts.	$ cts.
To 135 Members' Subscription		148 50	
" Admissions to Show		6 18	
" Legislative Grant		112 59	
" Special Prizes		30 50	
			297 77
Cr.			
By Balance due Treasurer		5 84	
" Prizes for Live Stock	102 25		
" " Field Products	28 65		
" " Dairy "	12 25		
" " Horticultural Products	12 10		
" " Agricultural Implements	9 75		
" " Arts and Manufactures	11 35		
		176 35	
" Special Prizes		29 50	
" Preparing Show Grounds		11 35	
" Working Expenses		45 28	
			268 32
Balance in hand			29 45

BROCKVILLE ELECTORAL DIVISION.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		82 05	
" 209 Members' Subscriptions		245 75	
" Admissions to Show		139 00	
" Legislative Grant		350 00	
" Miscellaneous Receipts		37 00	

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	214 80		
" " Field Products	38 66		
" " Horticultural Products	20 75		
" " Agricultural Implements	22 15		
" " Arts and Manufactures	128 89		
" " Growing Crops	72 00		
	497 25		
Unpaid	170 77		
		326 48	
" Preparing Show Grounds		184 50	
" Agricultural Publications		10 50	
" Working Expenses		177 20	
			698 68
Balance in hand			155 12

REPORT.

It is with more than ordinary satisfaction that your Officers and Directors of the past year meet you at this Annual Meeting. The measure of prosperity and success attending the Society, the harmonious manner in which the labours of the year have been conducted, and the pleasing result they are now able to present, render the occasion one of pleasure and congratulation. * * * * * * * * * *

At the Annual Exhibition held on the 19th and 20th September last, the competition was far in excess of *any* previous show of the Society, exceeding the Annual Exhibition of last year, both in individual competitors and the entries in the various classes. The total number of entries this year was 1,146 against 580 last year, being an increase this year of 566. In growing field crops the competition was very great, there being 257 entries in the various sections. In Horses there was an excellent show, every section in the class being fully represented. In Cattle the competition was also good, and most of the animals of a superior quality. The Thoroughbreds were better represented than in former years, showing progress in this direction. In Sheep and Swine there was an excellent show, there being a large number of entries in the various classes. The Grain, Seeds, Roots, Domestic Manufactures and Implements, the competition was so great as to exceed all former Exhibitions in the number of prizes awarded. The Ladies' Department was well filled with the most substantial and useful articles, and a great number of them displayed a good deal of ingenuity and taste.

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BRUCE, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		75 59	
" 151 Members' Subscriptions		151 00	
" Admissions to Show		39 50	
" Legislative Grant		700 00	
" Miscellaneous Receipts		8 25	
			974 34
Cr.			
By Prizes for Live Stock	172 50		
" " Field Products	55 75		
" " Dairy "	21 75		
" " Horticultural Products	12 75		
" " Agricultural Implements	31 75		
" " Arts and Manufactures	34 75		

	$ cts.	$ cts.	$ cts.
By Prizes for Ploughing Match (exclusive of donations)	33 00		
	362 25		
Unpaid	56 00		
		306 25	
" Prizes of previous year		6 75	
" Legislative Grant to Township Societies		420 00	
" Paid Elderslie Society		21 27	
" Working Expenses		134 95	
			889 22
Balance in hand			85 12

REPORT.

The duty devolves upon us, in accordance with the usual custom, of laying before you at your annual meeting a brief Report of the working of your Society during the past year, while we at the same time take the liberty of alluding briefly to other matters, which, in our opinion, have an important bearing on the agricultural interests of this Electoral Division, and the benefits which should be derived from our Agricultural Societies.

A similar routine of Exhibitions to that of previous years was followed by your Directors. The Spring Show of Stallions and Bulls was held at Paisley, on the 21st of April, and was an improvement on similar exhibitions of previous years. The animals shown were well worthy the attention of stock breeders, some of them excelling any animals of the kind shown at our previous exhibitions. A strong desire to introduce better breeds of cattle and horses is evidenced by many farmers in the County, and the beneficial results of this desire will ere long be manifest.

The Fall Exhibition was held at Southampton, on the 6th of October. Owing to various circumstances, there was a falling off in the number of entries, when compared to the exhibition of the previous year held at Paisley. The liberal inducements held out by the Village Council, offering to provide all necessary accommodation for the Exhibition without cost to the Society (which offer we are bound to say was carried out to the letter), had the effect of securing a vote of your Directors in favour of giving Southampton the preference. This action on our part, we regret to state, roused the people of the neighbouring village, as well as some of our best exhibitors in the Township of Saugeen, into a feeling of opposition, which prevented them from taking their usual place amongst the exhibitors of the day. The comparative failure of root crops also lessened the number of entries in that department very much. The Exhibition was, nevertheless, not an inferior one, all things considered. A large number of spectators attended, and the entrance fees to the Show Room exceeded in amount those of any previous Exhibition Whatever may have been the defects of the Fall Show, there is one feature that should not be lost sight of—the action of the Southampton people in providing the necessary accommodation for the Exhibition free from charge to the Society should, in our opinion, furnish a precedent for the guidance of your Directors, in selecting the place of future Exhibitions, so that the Village offering the most favourable inducements may have a chance of securing the Exhibition.

The Society's Ploughing Match took place on the 2nd November, in the Township of Elderslie. The Committee met with considerable difficulty in securing a proper field for the match; so much so that it was found impossible to obtain a suitable place on or near the gravel road. This, together with the unfavourable weather, operated against the match being as successful as it would have been under different circumstances: still the competition in the different classes was keen and the work all admirably performed. Year after year we have proof of the lively interest taken, especially by our young men, in this important branch of the husbandman's labours; and these annual matches, supported as they are to a great extent by our manufacturers and mechanics, encourage a highly commendable spirit of emulation among those who "follow the plough."

While on the subject of Exhibitions, we embrace the opportunity to bring before the members of the Society, as well as those of the Township Societies, a matter which we deem

of vast importance to the success of our Agricultural Societies, and the furtherance of the great object in view. We have had four years' experience of County and Township Exhibitions in this Electoral Division, and we cannot avoid the conclusion, that they have in a great measure failed to confer the benefit expected to be derived therefrom.

The simple fact is this: neither the County, nor any one of the Township Societies, is in itself capable of getting up a first class Exhibition; the funds are too much divided, the premiums offered are too small and embrace too narrow a scope. Partly in consequence of this, the number of members is far below what it should be in a rich agricultural district, and every Exhibition comes far short of what it might be, were the premiums more liberal, the number of members increased, the material of the Exhibition extended in variety and quantity, and competition less limited. We know of no method whereby this can be accomplished more readily than by a union of all the Township Societies with the Electoral Division Society, for the purposes of one Exhibition, extending over two or three days. In that case, sufficiently liberal premiums could be offered to induce a healthy and useful competition. Exhibitors would not hesitate to come in, even from beyond the limits of the County, the display of every description would be greater and more varied, and spectators and competitors would enjoy a better privilege of examining the material of the Exhibition, with every likelihood of more profitable results than under the present system. We can only, therefore, strongly recommend that such a course be adopted for one year at least, as an experiment, and should it fail to work satisfactorily the principle could be abandoned.

The summer and autumn of the past year were in some respects peculiar. The "oldest inhabitant" never knew of a drought so long continued and so severe. Much damage was caused by fire to growing crops, fences, buildings and timbered lands in several parts of the County, the extreme dryness of the season rendering it almost impossible to place an effectual barrier before the devouring element. We are happy, however, to be able to state, that the losses on the whole from this cause were comparatively light in this County: and although the drought had the effect of lessening the quantity of straw in our grain crops, and seriously injuring root crops, yet we have no hesitation in stating that so far as the yield and quality of the grain are concerned, the County of Bruce never did better. Fall wheat in general excelled in yield and quality that of any previous year in this County. Spring wheat yielded well, and the quality is above the average. The coarse grains also yielded a good return. Root crops were altogether below the average. The hay crop was light, and in many parts during summer farm stock suffered severely from want of water and pasturage. On the whole, however, we incline to the belief that the products of Bruce for 1871 will equal, if not exceed, those of 1870.

Apart from the consideration of matters in connection with the Society, and the results of the labours of the husbandman, in the year just closed we have valid reasons for congratulating the inhabitants of North Bruce on the rapid and substantial progress made in material and highly beneficial improvements in this section of the country. The extraordinary increase in our population during the last decade is a strong proof of the advantages our County possesses as a home for the immigrant.

In the history of Ontario, no instance can be quoted of a Country so rapidly reclaimed from the forest; in which so much has been done in so short a time towards developing its resources; or where public improvements have been pushed forward with an energy and determination so praiseworthy, in every respect, on the part of the settlers who have made it their home. For several years our progress has been retarded by want of ready communication with the outer world. Owing to this, our farmers have often been compelled to dispose of their surplus produce at a disadvantage, our imports being often too dear and our exports too cheap.

Men of energy and ability, who had withstood all the hardships of a backwood's life, and whose intelligence led them to believe that this state of affairs was beyond the limits of reason—that a County possessing such advantages for the agriculturist and the manufacturer should be so long cut off from the seats of commerce—maintained the hope that a better state of affairs would one day exist.

Happily the drawback referred to is now being removed, and we can count with a certainty, upon what we could only earnestly hope for at the date of our last annual meeting, that is, a railway.

The progress made in the construction of the Wellington, Grey and Bruce Railway has

exceeded our most sanguine expectations, and its completion to the shores of our great Lake, which, we have no doubt, will be accomplished before the close of the current year, will prove an inestimable boon to the North Riding of Bruce.

Whatever may have been our progress in the past, we have reason to believe that our growth in wealth and prosperity, as a County, is only in its infancy; and that this section of country, rich in its agricultural resources—its manufacturing facilities becoming more fully developed, and its means of ingress and egress, by land as well as by water, thoroughly established—is about to begin a new era in its history; and the character of its progress during the interval which has elapsed since the white man first took possession of its forests, with all the difficulties inseparable from a new settlement in the backwoods to contend against, is the best guarantee we can have of the giant strides it will make under the more favourable circumstances we have now reached.

We can have no sympathy with those who endeavour to disparage this country, and flatter the neighbouring States. We are not, it is true, free from disadvantages; but every true Canadian can see much to admire and little to despise in this, his native or adopted country. We may have extremes of heat and cold; our summers may be sometimes dry and our winters stormy; nevertheless those who ought to know best do not hesitate to state that, all things considered, Canada will bear favourable comparison, as a home for the immigrant, with any of the States, either *east* or *west*. Our climate, severe though it may be, is calculated to nurture a hardy and vigorous race, imbued with a spirit of loyalty to the Crown, and obedience to the laws which govern them, our resources are such that every honest man, willing to labour rather than want, can make a decent living amongst us; while men of energy and perseverance, pursuing an honest and straightforward course in their dealings with their fellow-men, can attain to wealth and even affluence in our midst.

We enjoy a system of Government affording the most ample security to life and property, and fostering those principles of morality, without which a nation can never rise to true greatness.

Arran.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		52 96	
" Members' Subscriptions		120 75	
" Admissions to Show		10 20	
" Legislative Grant		134 67	
			318 58
Cr.			
By Prizes for Live Stock	68 25		
" " Field Products	38 25		
" " Dairy "	15 50		
" " Horticultural Products	3 00		
" " Agricultural Implements	19 00		
" " Arts and Manufactures	18 75		
" " Ploughing Match	19 00		
		181 75	
" Prize of last year		1 25	
" Working Expenses		47 51	
			230 51
Balance in hand			88 07

REPORT.

* * * * * *

In bringing this Annual Report before you, your Directors are happy to be able to say, that the past year has been a successful one for your Society; financially it has never been upon as good a foundation, as can be seen now by the balance in the Treasurer's hands. The interest taken in your Society by a large number of its members, not only in increasing their subscriptions liberally beyond the required amount, but also in giving your Directors assistance when in any way called upon so to do, has been a gratification to them and a source of success.

The Society's Annual Exhibition was held on the 5th day of October. Notwithstanding the unfavourable season which preceded it, there was a good display in most of the departments. The excessive drought which prevailed during the summer affected the spring crops and pasture to an unusual extent, and the result was plainly visible in several departments of the Exhibition. We would now refer you to some of its leading features—in the number of horses it exceeded any previous year, there were fifteen entries in the class of two years old, and the greater number of these were animals of superior quality; in the class of cattle there were two thorough-bred bulls shown of short-horn pedigree, and we are pleased to see that their presence is improving the stock in this section; swine were well represented, the improved Berkshire predominating – several extra specimens in this class were to be seen; domestic manufactures and agricultural implements filled their places as usual.

We notice with great satisfaction the enlargement of Mr. W. A. Gerolamy's Fanning Mill Manufactory, where are also to be got Gardner's Patent Root Cutter, and several dimensions of Straw Cutters.

"Dick's Works" have gone extensively into the manufacture of Cultivators, which your Directors would recommend to the farming community.

Our inside show exceeded by far our expectations. Grain and seeds were in great variety. Dairy produce was here in abundance and of good quality. In the class of roots and vegetables there were less entries than on former occasions, owing to the unusual dry season.

Your Directors are pleased with the assistance which they received from the ladies. The great display of their work not only adds beauty, but shows they are willing to give a helping hand to increase the pleasure of these occasions.

Bruce.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		55 13	
" 58 Members' Subscriptions		59 25	
" Admissions to Show		3 25	
" Legislative Grant		61 63	
" Miscellaneous Receipts		2 25	
			181 51
Cr.			
By Prizes for Live Stock	63 75		
" " Field Products	27 00		
" " Dairy "	7 00		
" " Horticultural Products	2 00		
" " Agricultural Implements	5 25		
" " Arts and Manufactures	12 00		
		117 00	
" Prize of last year		1 75	
" Preparing Show Grounds		13 34	
" Working Expenses		11 81	
			143 90
Balance in hand			37 61

Elderslie.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		6 05	
" 117 Members Subscriptions		125 00	
" Admissions to Show		5 80	
" Legislative Grant		125 55	
" Miscellaneous Receipts		21 27	
			284 68
Cr.			
By Prizes for Live Stock	63 75		
" " Field Products	27 00		
" " Dairy "	10 00		

	$ cts.	$ cts.	$ cts.
By Prizes for Horticultural Products	2 75		
" " Agricultural Implements	7 50		
" " Arts and Manufactures	21 50		
	137 50		
Unpaid	12 25		
		125 25	
" Preparing Show Grounds		26 00	
" Working Expenses		35 18	
			186 43
Balance in hand			98 25

Saugeen.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		61 86	
" 85 Members' Subscriptions		85 00	
" Admissions to Show		5 30	
" Legislative Grant		98 15	
" Subscriptions for Ploughing Match		53 25	
			303 56
Cr.			
By Prizes for Live Stock	95 00		
" " Field Products	40 75		
" " Dairy "	15 00		
" " Horticultural Products	3 25		
" " Agricultural Implements	8 00		
" " Arts and Manufactures	19 00		
" " Ploughing Match	60 50		
	241 50		
Unpaid	60 00		
		181 50	
" " Preparing Show Grounds		17 25	
" " Working Expenses		90 00	
			288 75
Balance in hand			14 81

BRUCE, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		14 76	
" 87 Members' Subscriptions		90 75	
" Admissions to Show		91 27	
" Legislative Grant		700 00	
" Subscriptions for Ploughing and Turnip Matches and Fat Show		219 00	
" Brant Society for Fall Show		128 04	
			1243 82
Cr.			
By Prizes at Spring and Fall Shows	530 50		
" " for Ploughing	59 50		
" " for Turnip Match	20 00		
" " Fat Cattle Show	31 75		
		641 75	

	$ cts.	$ cts.	$ cts.
By L.G. to Township Societies		418 80	
" Working Expenses, including Show Grounds		160 05	
			1220 60
Balance in hand			23 22

Culross.

Dr.	$ cts.	$ cts.	$ cts.
To 71 Members' Subscriptions		71 00	
" Admissions to Show		4 50	
" Legislative Grant		43 66	
			119 16
Cr.			
By Balance due Treasurer		6 16	
" Prizes for Live Stock	77 00		
" " Field Products	23 50		
" " Dairy "	6 24		
" " Horticultural Products	1 50		
" " Agricultural Implements	9 75		
" " Arts and Manufactures	14 00		
		131 99	
" Working Expenses		13 65	
			151 80
Balance due Treasurer			32 64

Greenock.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 95	
" 63 Members' Subscriptions		63 00	
" Admissions to Show		4 00	
" Legislative Grant		38 75	
" Municipal Grant		10 00	
			117 70
Cr.			
By Prizes for Live Stock	50 80		
" " Field Products	20 22		
" " Dairy "	5 25		
" " Horticultural Products	4 30		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	12 37		
		95 94	
" Preparing Show Grounds		2 25	
" Agricultural Publications		5 00	
" Working Expenses		14 51	
			117 70
Balance			0 00

Huron.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		67 32	
" Members' Subscriptions		125 50	
" Legislative Grant		70 11	
" Proceeds Sale of Seeds and Live Stock		227 09	
" Ploughing Match		105 25	
			595 27

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	85 00		
" " Field Products	28 50		
" " Dairy "	8 25		
" " Horticultural Products	7 50		
" " Agricultural Implements	7 75		
" " Arts and Manufactures	14 75		
" " Ploughing Match	126 00		
		277 75	
" Purchase of Stock and Seeds		203 12	
" Working Expenses		53 62	
			534 49
Balance in hand			60 78

Note.—The Exhibition was well attended, and, considering the dryness of the season, the number and quality of Stock, Grains, and Roots exceeded expectations.

Kincardine.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		42 41	
" 86 Members' Subscriptions		86 50	
" Legislative Grant		44 89	
			173 80
Cr.			
By Prizes at Fall Show		98 00	
" Working Expenses		32 23	
			130 23
Balance in hand			43 57

CARDWELL.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		3 79	
" 163 Members' Subscriptions		163 00	
" Admissions to Show		152 50	
" Legislative Grant		280 00	
" Bills payable		101 02	
			700 31
Cr.			
By Prizes for Live Stock	220 00		
" " Field Products	83 00		
" " Dairy "	20 00		
" " Horticultural Products	36 00		
" " Agricultural Implements	60 30		
" " Arts and Manufactures	26 00		
		445 30	
" Prizes of Previous Year		15 62	
" Preparing Show Grounds		100 12	
" Working Expenses		144 86	
			705 90
Balance due Treasurer			5 59

Albion.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		124 67	
" 153 Members' Subscriptions		168 00	
" Admissions to Show		160 80	
" Legislative Grant		69 15	
" Municipal Grants		62 75	
" Subscriptions to Show Grounds		104 50	
" Special Prizes		94 50	
" Miscellaneous Receipts		8 00	
			792 37
Cr.			
By Prizes for Live Stock	181 00		
" " Field Products	25 00		
" " Dairy "	36 00		
" " Horticultural Products	21 75		
" " Agricultural Implements	56 00		
" " Arts and Manufactures	33 25		
		353 00	
" Prizes for Previous Year		31 75	
" Preparing Show Grounds		297 40	
" Working Expenses		44 79	
			726 94
Balance in hand			65 43

Note :—The Society continues to prosper, and the Autumn Show was very successful. Permanent grounds have been secured, on which buildings and arrangements for exhibition purposes have been commenced.

Caledon.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		233 99	
" 254 Members' Subscriptions		257 00	
" Admissions to Show		269 82	
" Legislative Grant		140 00	
" Municipal Grant		28 25	
" Miscellaneous Receipts		5 00	
			934 06
Cr.			
By Prizes for Live Stock	161 75		
" " Field Products	54 50		
" " Dairy "	17 75		
" " Horticultural Products	17 75		
" " Agricultural Implements	22 00		
" " Arts and Manufactures	67 75		
" " Special Prizes	22 75		
	364 25		
Unpaid	34 75		
		329 50	
" Prizes for Previous Year		29 00	
" Preparing Show Grounds		232 00	
" Working Expenses		191 04	
			781 54
Balance in hand			152 52

Mono.

Dr.	$ cts.	$ cts.	$ cts.
To 215 Members' Subscriptions		215 00	
" Admissions to Show		99 97	
" Legislative Grant		93 60	
" Miscellaneous Receipts		95 13	
			503 70
Cr.			
By Balance due Treasurer		50 50	
" Prizes for Live Stock	143 50		
" " Field Products	56 00		
" " Dairy "	12 25		
" " Horticultural Products	5 70		
" " Agricultural Implements	59 00		
" " Arts and Manufactures	49 10		
	325 55		
Unpaid	42 05		
		283 50	
Preparing Show Grounds		24 00	
" Working Expenses		54 50	
" Special Prizes		100 00	
			512 50
Balance due to Treasurer			8 80

CARLETON.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		508 63	
" 121 Members' Subscriptions		574 00	
" Admissions to Show		283 47	
" Legislative Grant		700 00	
" Municipal Grants		365 00	
" Borrowed for Erection of Buildings		1576 97	
" Balance of Insurances		784 32	
" Miscellaneous Receipts		62 50	
			4854 89
Cr.			
To Prizes for Live Stock	354 00		
" " Field Products	117 00		
" " Dairy "	58 50		
" " Horticultural Products	51 00		
" " Agricultural Implements	82 00		
" " Arts and Manufactures	104 00		
		766 50	
" Legislative Grant to Township Societies		394 75	
" Exhibition Buildings, &c.,		3433 49	
" Insurance		21 50	
" Agricultural Publications		31 20	
" Working Expenses		207 45	
			4854 89

Fitzroy.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		19 24	
" 54 Members' Subscriptions		119 75	

		$ cts.	$ cts.
By Legislative Grant		244 75	
			283 74
Cr.			
By Prizes for Live Stock	91 75		
" " Field Products	18 95		
" " Dairy "	10 00		
" " Horticultural Products	11 50		
" " Agricultural Implements	8 75		
" " Arts and Manufactures	34 50		
" " Growing Crops	58 75		
	234 20		
Unpaid	19 45		
		214 75	
" Preparing Show Grounds		3 50	
" Agricultural Publications		13 50	
" Working Expenses		44 50	
			276 25
Balance in hand			107 49

March.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		6 00	
" 21 Members' Subscriptions		75 00	
" Admissions to Show		3 00	
" Legislative Grant		150 00	
			234 00
Cr.			
By Prizes for Live Stock	126 56		
" " Field Products	8 42		
" " Dairy "	13 00		
" " Growing Crops	58 00		
		205 98	
Working Expenses		28 10	
			234 08
Balance due Treasurer			00 08

CORNWALL.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		140 34	
" 89 Members' Subscriptions		118 00	
" Legislative Grant		350 00	
" Miscellaneous Receipts		29 35	
			637 69
Cr.			
By Prizes for Live Stock	98 25		
" " Field Products	53 75		
" " Dairy "	23 50		
" " Horticultural Products	10 00		
" " Agricultural Implements	25 50		
" " Arts and Manufactures	48 75		
		259 75	

	$ cts.	$ cts.
By Preparing Show Grounds	20	
" Purchase of Seed and Stock	43	
" Agricultural Publications		
" Arbitration Award	54 47	
" Working Expenses	150 57	
		34 26
Balance in hand		73 43

DUNDAS.

Dr.	$ cts.	$ cts.	$ cts.
To Balance to hand		394 69	
" 396 Members' Subscriptions		396 12	
" Admissions to Show		373 04	
" Legislative Grant		700 00	
" Proceeds of Rent of Booths, &c		124 00	
" Donation of President		15 00	
			2002 85
Cr.			
By Prizes for Live Stock	652 47		
" " Field Products	46 31		
" " Dairy "	13 85		
" " Horticultural Products	31 45		
" " Agricultural Implements	61 60		
" " Arts and Manufactures	110 85		
		916 53	
" Legislative Grant to Township Societies		412 28	
" Preparing Show Grounds		239 53	
" Working Expenses		223 75	
			1792 09
Balance in hand			210 76

REPORT.

Another year has rolled away since our last annual meeti ; a year which, although it has brought to many both joy and sorrow, we think we may look back on as being one of peace, plenty and comfort. We think we may safely congratulate the Society on the continued progress going on in this County, being blessed with good crops and one of the best markets in the Province. The value of Real Estate is continually increasing, while the enterprise of some of our members in importing cattle and sheep has made our County of note throughout the Province.

Our annual Fair for the past year, although held earlier in the season than was considered advantageous, we think may, on the whole, be considered a decided success.

The display of Horses, although superior to previous years, was still not what the prospering County of Dundas should exhibit. We are glad to know that more attention is being paid to the improvement of horses in the County.

The Horned Cattle were as good in their respective classes, in proportion to their numbers, as those at the Ontario Provincial Exhibition.

The display of Sheep was small, but would have compared favourably with sheep at the Provincial Show. This branch of stock-raising, we think, should receive much more attention from us than it at present does. From the prices of wool and mutton, it coud be made as profitable as any other branch of husbandry, with perhaps less labour than any, and at the same time tend very much to enrich the soil.

The display of Farm Implements was very small, which we attribute in a great measure

to the narrow-sighted policy which excludes all implements and vehicles not manufactured within the County, thereby holding no inducement to our farmers to import agricultural implements, which are of much service to the County, considering the difficulty of obtaining manual labour.

The Floral Hall, thanks to the Ladies, was rather more decorated than usual, and contained a display of articles, both in the fancy department and domestic manufactures, of which we may very justly be proud.

The Fruit, though small in quantity, was fair in quality.

We may here remark that we think fruit-growing and horticulture might be made both pleasant and profitable to our farmers, if more extensively practised.

The display of Vegetables was not quite equal to former years, in consequence of the Show being so early, but under the circumstances may be considered very good.

It was pleasing to see a new branch of manufacture, in the shape of some very nice Household Furniture, exhibited by our enterprising townsmen, Kellogg and Kilgour. Speaking of household furniture leads us to think of houses themselves. May we be pardoned if we stray from the point a little to touch on the subject of Farm Architecture, which we think is not altogether irrelevant in this connection. Are we not as a community far too negligent in matters of taste and adornment, as well as convenience, connected with the construction of our dwellings, and the ornamentation of the grounds surrounding them with trees and shrubs, the laying out of grounds, &c. We believe considerable money laid out in this way would be more than repaid in the pleasure it would give, not only to the farmer himself, but to his family, who, if home were made more attractive, might often be prevented from roaming to places no more favoured than this, in quest of those comforts which they imagine they do not possess at home.

Our northern climate renders it necessary that our cattle should be carefully housed during the winter. Our barns and our out-buildings ought therefore to be constructed so that the cattle may be fed with as little work and as much economy of fodder as possible, and cellars for storing roots for feed, and cisterns attached wherever there is any likelihood of a scarcity of water. This subject was touched upon at some length by the President of the Provincial Society, and we think is one for earnest consideration by the farming community.

We would now congratulate the Society on its financial prosperity.

The Directors have the pleasing satisfaction that, after adding about 40 per cent. to the prize list and paying all demands, they still have the sum of $210 76c. in the treasury for their successors to commence another year with.

And now, Gentlemen, in conclusion, let us hope that you will all unite with us in returning sincere thanks to a benevolent Providence for His many mercies to us during the past year. While other countries have been afflicted with famine and epidemics, we have been blessed with health and prosperity.

Matilda.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 04	
" 88 Members' Subscriptions		88 00	
" Legislative Grant		80 00	
			170 04
Cr.			
By Prizes for Live Stock	46 75		
" " Field Products	11 25		
" " Dairy "	2 50		
" " Horticultural Products	0 50		
" " Agricultural Implements	21 50		
" " Arts and Manufactures	14 50		
	97 00		
Unpaid	6 75		
		90 25	
" Prize of previous year		0 75	

		$ cts.	$ cts.
By Preparing Show Grounds		8 00	
" Working Expenses		39 25	
			138 25
Balance in hand			31 79

Mountain.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		16 97	
" 81 Members' Subscriptions		84 00	
" Legislative Grant		76 36	
			177 33
Cr.			
By Prizes for Live Stock	78 00		
" " Field Products	15 00		
" " Dairy "	5 00		
" " Horticultural Products	9 00		
" " Agricultural Implements	15 00		
" " Arts and Manufactures	28 20		
" " Ploughing Match	6 00		
		156 20	
" Preparing Show Grounds		3 50	
" Working Expenses		24 00	
			183 70
Balance due Treasurer			6 37

Note.—The Directors report the Society to be in an improving condition, and doing a good work. The Annual Show was a success.

Williamsburgh.

Dr.	$ cts.	$ cts.	$ cts.
To 130 Members' Subscriptions		131 00	
" Legislative Grant		115 92	
" Proceeds, Sale of Live Stock		68 00	
			314 92
Cr.			
By Balance due Treasurer		2 79	
" Prizes for Live Stock	134 05		
" " Field Products	30 20		
" " Dairy "	5 50		
" " Agricultural Implements	25 45		
" " Arts and Manufactures	35 50		
		230 70	
" Preparing Show Grounds		29 53	
" Working Expenses		32 42	
			295 44
Balance in hand			19 48

REPORT.

Your Directors, in making this their Annual Report, beg leave to say that the past year has been one of unusual prosperity, and that we have been blest with an abundant harvest, for which we feel that we should give thanks to the Gracious Giver. In regard to our Exhibition, from the experience of the previous year we felt that it was necessary to enlarge our Exhibition Building. We did so by adding 24 feet to the length, which, we believe, gave gene-

ral satisfaction. Our Exhibition was held on the 21st and 22nd days of September, and, we believe, will be admitted was a decided success, far outstripping any previous Exhibition, the various departments being well filled and the competition spirited. We would recommend the members to continue to take the deepest interest in the success of the Society, for we believe there is yet room for improvement. Owing to various circumstances our Annual Ploughing Match did not take place, which we very much regret, believing, as we do, that such matches should be encouraged. Your Directors have further to report that they have sold the three bulls belonging to the Society, which leaves the Society only the three rams.

Winchester.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		21 65	
" 160 Members' Subscriptions		161 00	
" Legislative Grant		140 00	
" Proceeds Sale of Live Stock		36 50	
" Cash borrowed		100 00	
			459 15
Cr.			
By Prizes for Live Stock	178 65		
" " Field Products	13 75		
" " Dairy "	15 50		
" " Horticultural Products	2 75		
" " Agricultural Implements	20 50		
" " Arts and Manufactures	19 00		
" Ploughing Match	19 00		
		265 15	
" Prizes of previous year		15 50	
" Preparing Show Grounds		7 00	
" Purchase of Live Stock		88 60	
" Working Expenses		69 62	
			445 87
Balance in hand			13 28

DURHAM, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		24 42	
" 55 Members' Subscription		55 00	
" Admissions to Show		184 90	
" Legislative Grant		700 00	
" Hope Society for Union Show		152 03	
			1116 35
Cr.			
By Prizes for Live Stock	311 00		
" Field Products	60 00		
" Dairy "	16 25		
" Horticultural Products	43 25		
" Agricultural Implements	50 00		
" Arts and Manufactures	90 50		
		571 00	
" L. G. to Township Societies		419 99	
" Preparing Show Ground		30 00	
" Working Expenses		101 97	
			1122 96
Balance due Treasurer			6 61

REPORT.

The Directors, in presenting their annual report, desire to thank the friends, and patrons of the Society for their co-operation in carrying out the objects of the Association, namely, the offering of premiums for animals and articles of superior quality.

You must be aware that the efforts of any association to promote certain interests or objects must prove vain and futile, unless those efforts are seconded by the people; and if the East Durham Agricultural Society has failed to attain so high a standard as it should have attained, we venture to assert that the fault is not all with those who have had the management of its affairs, for we are well aware that a good deal of time and money has been spent by those individuals, in directing the operations of the Society, and in the introduction of improved breeding animals and articles into the Riding, and the benefits resulting therefrom have been participated in by the public at large. It has been remarked that our Exhibitions are not so fine as they should be, or as good as in some of the neighbouring counties: we grant this; but is there not a cause? Our lands are not so fertile, and perhaps our farmers are not as enterprising as in some of those, but where are those deer-like sheep and pigs, that were more like porcupines than anything else, which used to greet your eyes twenty years ago; and compare the beef brought into the Port Hope market now, with that of the same period, and we think all will acknowledge that a great improvement has taken place. It is an old saying that time changes circumstances. It has been especially the case with the Canadian farmer's fall wheat, which was at one time the great staple of the country, has in a measure failed, but we have not been left without resources. The increase in our towns and cities and the demand for stock on the other side of the lines, have enabled our farmers to meet the loss of the wheat crop, by substituting another system, viz., the raising stock, growing large quantities of turnips to fatten said stock, as well as growing barley extensively, which has been bought up by our American neighbours; also, the manufacture and exportation of immense quantities of cheese. We believe the latter mode of farming is better calculated to preserve the fertility of the soil than the former. The grain crops of the past year are considered to be somewhat above an average; but the dry season was very unfavourable to the hay and vegetables, as well as for the pastures, consequently cattle and sheep at the Exhibition did not appear in such fine condition as is usual. The Exhibition of the East Durham Society held at Port Hope in October last, was in connection with the Township of Hope Society, and although it might not have been quite as good as on some former occasions, (owing in a great measure to the causes before named,) yet, we think upon the whole, there is no reason to find fault; in some departments it was superior to any former exhibition.

The show of horses was large and the competition spirited, some very fine animals were on the ground; it may be remarked here, that the horses in this Riding are chiefly of the general purpose class—and the owners in making their entries are very often puzzled to know in which class to place them—we suppose that in the course of a few years this difficulty will be obviated, and that our horses will be of a more distinctive character, as heavy draft horses are being introduced into the country, as well as the pure *blood*.

The show of cattle, as usual, was not large. In the Durham class, there were only nine entries, and in the Devon class the same number; of Ayrshires, there were eight entries: in the Grade class the competition was greater, twenty-two entries being made. The Directors in revising the premium list, thought proper to cut off the third prizes on Devons—and the premiums formerly offered for Grade bulls.

The show of long wool sheep was *as usual* large, and of a very respectable character. The Southdowns are getting into more hands, consequently the competition was greater; some very fair specimens were exhibited. The premiums formerly offered for fine wool sheep have also been taken off the list.

The show of pigs was very good indeed, and surpassed all former exhibitions of the kind at Port Hope or in the Riding—especially of Berkshire—which are becoming the general favourites; quite a number of those exhibited were from the stock of Mr. Snell, and other noted breeders.

The show of poultry was of a very superior character, and one of the most attractive parts of the Exhibition; the fowls and pigeons exhibited by Mr. William Simpson were deservedly admired. The show of grain was large, and all the samples were of superior quality. There were fifteen entries of butter, and sixteen of domestic, all fit for the Queen's table.

We are proud to say that our good wives and spinsters in East Durham excel in this department of housekeeping.

The show of fruit, especially apples, was very fine. The vegetables, garden and field, though not numerous, were of good quality; a number of samples of the newest and most fashionable kinds of potatoes were exhibited, which were awarded premiums, extra or otherwise. The show of carriages and implements was not large.—We think our manufacturers in this department hardly keep pace with the *times*.

The exhibition of domestic manufacture was a proof that our people are not neglecting this commendable branch of domestic economy. Some good samples of cloth and tweeds were on exhibition from the factory of Mr. James Dyer, of Garden Hill, in the Township of Hope.

In noticing animals and articles brought into the Riding from other parts of the Dominion, we will begin with the horses. A very fine young horse, of the agricultural class, has been introduced by Mr. Asa Choate, of Belmont, near Port Hope, well calculated, *we think*, to improve this class of horses in the riding. This young horse was awarded the first prize in his class at the late Provincial Fair held at Kingston.

A blood-horse has also been brought into the riding, by a very liberal premium offered last spring by the Hope Agricultural Society. This horse has been purchased by the Secretary of the Society, and will be kept for service in the County during the coming season.

Cattle:—We are not aware of any cattle being brought in except in the Ayrshire class. Mr. A. Choate has had a few of these for some years past. We believe he was the first to introduce them into the Riding. At the late Provincial Fair seven of those valuable kind of cattle were purchased by Messrs. Russell & Gardiner, of Cavan, and Foott, of the Township of Hope. We venture to predict that in the course of a few years the Ayrshire class will be the most numerous of any of the pure breeds exhibited. This breed of cattle commend themselves to the public, in that they are easily kept; thriving on coarse feed; yielding a large quantity of rich milk; and are very apt to fatten.

A number of the sheep and pigs exhibited at our late show, were purchased from our best stock-breeders in the west of the Province. Of implements, a few new kinds were exhibited. A two furrow plough, said to be a very valuable implement, was exhibited by Marshall & McCartay, of Millbrook. A patent iron harrow, manufactured at Gananoque was exhibited by Mr. Parsons, the agent at Port Hope. A combined cultivator and seed drill (*which was awarded an extra prize at the Provincial Fair.*) was exhibited by Mr. John Westlock, of Hope, who is the manufacturer. Wamsly's patent potato digger was on exhibition. All those implements were awarded premiums, extra or otherwise. So much for the past.

In looking to the future, we are aware that a wide field lies before us. Very much remains to be done. While we think it highly important that Agricultural Societies should hold out great inducements for the importation and improvement of stock, we think it is equally important that they should direct their attention to a variety of other matters connected with agriculture, such as the importation of grain, seeds, plants and vegetables; we think that the different denominations of Agricultural Societies in this Province have fallen short of their duty in this respect. Our Provincial Board of Agriculture last year obtained from Washington, wheat, barley, beans, corn, &c. This was distributed to the Agricultural Societies in the Province of Ontario. The results have not been very satisfactory. Most of the varieties have failed, except the barley, which we intend to try another year. Our opinion is that any new varieties of cereals should come from the north and not from the south. There have been great complaints of late about the failure of our clover crop. This may partly arise from the unfavourable seasons we have had lately, but it is very likely that the land is becoming sick of clover, as well as of some other crops. It might be well to direct attention to some of our native grasses, as well as to other foreign varieties, to supply the place of clover. It will be in the recollection of some of the members of this Society, that a Mr. Fife, of Otonabee, introduced a new variety of wheat, since known as Fife wheat, and you also are aware that it has been one of the greatest boons ever conferred upon this Province; we believe it is not too much to say, that it almost saved the country from bankruptcy, coming in, as it did, at a time when the fall wheat almost totally failed. We are glad to inform you that Mr. Fife is now in possession of another new variety, which is likely to prove very valuable, and which he is offering to sell in small quantities to Agricultural Societies, and we think it would be wise for this Society to secure some of it for the benefit of its Members.

Before we conclude this report we desire to express our high appreciation of the labours of the Township Societies, comprising this Electoral Division Society. It has been the expressed opinion of some of our agricultural friends, that there are too many societies, and that the Township Societies should be given up. We are of a different opinion. We believe there are no Societies in this Province doing so much good as the Township Societies, in the dissemination of practical knowledge, the distribution of periodicals, and holding of meetings for the discussion of practical subjects connected with agricultural pursuits. The fact of their being local enables them to do this much more effectually than larger Societies could do it. We hope that these Township Societies will still go on and prosper, and that they will continue to co-operate with this Society in carrying out the objects which we have in view, namely, the improvement and advancement of the agricultural interest of this Riding, and of the Province at large.

Cavan.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		75 05	
" 178 Members' Subscriptions		178 00	
" Admissions to Show		65 00	
" Legislative Grant		136 17	
" Miscellaneous Receipts		56 65	
			510 87
Cr.			
By Prizes for Live Stock	138 00		
" " Field Products	27 75		
" " Dairy "	5 00		
" " Horticultural Products	19 00		
" " Agricultural Implements	15 50		
" " Arts and Manufactures	42 00		
" " Mowing Match	30 00		
		277 25	
" Agricultural Publications		108 62	
" Working Expenses		88 16	
			474 03
Balance in hand			36 84

Hope.

Dr.	$ cts.	$ cts.	$ cts.
To Balance on hand		00 63	
" Members' Subscriptions		363 00	
" Legislative Grant		140 00	
			503 63
Cr.			
" Premiums		302 03	
" Agricultural Publications		123 60	
" Working Expenses		57 31	
			482 94
Balance in hand			20 69

REPORT.

During the past year the membership of the Society has been larger than at any time since its formation (twenty-five years ago). This may be accounted for by the decision of the directors and members at the annual meeting in 1871, to hold meetings in the different Sections of the Township during the winter. Those meetings were interesting and useful. Essays were read, and discussions took place on Agriculture, Manures, raising of Stock, &c., &c., and created an interest in the operations of the Society.

In consequence of merging their funds with those of the County Society, and having a

Union Exhibition in Port Hope, t .ey had no Township Exhibition in the fall, but had an Exhibition in the spring of entire horses, and awarded one hundred and fifty dollars, in two premiums of seventy-five dollars each, for the best blood stallion, and the best general purpose stallion.

The show of horses was good, and the directors hope will have a good effect in improving the breed of horses in the Township.

Manvers.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		14 82	
" 68 Members' Subscriptions		68 00	
" Admissions to Show		56 53	
" Legislative Grant		48 96	
			188 31
Cr.			
By Prizes for Live Stock	52 50		
" Field Products	11 25		
" " Dairy "	2 00		
" " Horticultural Products	6 50		
" " Agricultural Implements	5 00		
" " Arts and Manufactures	22 50		
		99 75	
" Working Expenses		41 84	
			141 59
Balance in hand			46 72

Port Hope Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		134 77	
" 134 Members's Subscriptions		134 00	
" Admissions to Show		26 73	
" Legislative Grant		94 86	
" Miscellaneous Receipts		12 25	
			402 61
Cr.			
By Prizes at Exhibition		105 75	
" Rent and Preparing Hall		37 10	
" Convictions of Fruit Thieves		30 00	
" Horticultural Publications		63 65	
" Working Expenses		19 10	
			255 60
Balance in hand			147 01

REPORT.

Your Directors have again to congratulate you upon the success attending the efforts of of this Society during the past year ; the financial standing of the society, as you will see by the Treasurer's report, is very good, better, in fact, than it has ever been before ; and that, too, after going to much more expense than we dared do in previous years, both with regard to our having given much larger prizes for articles exhibited, and paying a heavy rent for the place of exhibition during two days. In mentioning that fact, your directors would suggest that in future the Society exhibit but one day instead of two, and that the day of exhibition should never be on Saturday.

Your Directors were well-pleased with both the variety and quality of articles exhibited. As usual, the show of Flowers was very large, and too much praise cannot be given both to Messrs. W. T. Mitchell & Bro. and Messrs. Smart & Eddie for their many contributions in this class, as well as the manner in which they laboured in preparing the Hall.

The show of Vegetables and Fruit was very good, and, we believe, larger than any previous year. There were several other articles exhibited, but, as they were not included in the prize-list, we will not trouble you with mentioning, although many of them deserve it.

Your Directors would earnestly recommend that, in future, every description of Ladies' Fancy Work be included in the prize-list; much dissatisfaction seemed to prevail amongst many of the members of this Society on account of that being left out. It is true that the object of this Society is to create a greater taste for everything Horticultural, but, as many are members who have no means of making a display in flowers, &c., we think that prizes should be given them for anything else of their making that tends to improve our taste in arts, and beatify our homes, and nothing, with the exception of flowers, makes so great a display in the Hall of Exhibition as Ladies' Work, Paintings, Drawings, &c.

We beg to call your attention to the fact that we have, during the last fall, paid the sum of thirty dollars ($30.00), for the arrest and conviction of parties caught stealing fruit, and believe that the issuing of notices and offering a reward have been of great benefit to fruit-growers who live in the town, and, as this was for the benefit of all, both members and non-members, we feel assured that it will cause others to join the Society, and aid us in the work. It should also be borne in mind, by the members of the Society, that they were furnished with a valuable monthly paper on Horticulture during the last year, without any additional cost, and, although the expense for that alone exceeded $63.00, we are still in a better financial condition than we were last year.

DURHAM WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		168 76	
" 91 Members' Subscriptions		91 00	
" Admissions to Show		434 40	
" Legislative Grant		700 00	
			1394 16
Cr.			
By Prizes for Live Stock	362 25		
" " Field Products	42 50		
" " Dairy "	24 00		
" " Horticultural Products	57 20		
" " Agricultural Implements	62 00		
" " Arts and Manufactures	112 00		
		659 95	
" Legislative Grant to Township Societies		379 40	
" Preparing Show Grounds		4 77	
" Working Expenses		106 69	
			1150 81
Balance in hand			243 35

REPORT.

Your Directors, in presenting the Fortieth Annual Report of this Association, desire gratefully to acknowledge that a bountiful Providence has crowned the year with gladness, and caused the earth to yield its increase for the sustenance of man and beast.

In taking a retrospect of the history of this Society from its commencement, your Directors are impressed with the vast improvement that has taken place in the social position of the agriculturist, and in the manner of carrying on his operations. At that time nearly the whole of the exports of the country consisted of breadstuffs, and the operations of the farm were carried on principally with the view to raise as much wheat as possible for market. This system, if persevered in, would soon have exhausted our soil, and rendered our fertile fields no better than barren wastes. But the dissemination of knowledge has induced a better system of farming, and the agriculturist now finds a ready and profitable market for a great

variety of products: and a proper rotation of crops, in order to produce these commodities, combined with other improvements, renders the soil more and more fertile every year.

Again the vast improvement made in the quality of our horses, cattle, sheep, swine, &c. has attracted the attention of parties outside, who have become extensive purchasers of our products at remunerative prices. The scarcity of labourers, and consequent high wages, have been in great measure neutralized by the multiplicity of labour-saving implements invented and brought into use.

Your Directors believe that farming, as at present carried on, is far more profitable than it was twenty years ago—that to this, and kindred institutions, is to be attributed, in great measure, this improved state of things; and that these associations, therefore, well deserve, at the hands of the Government, the liberal assistance afforded them.

The operations of this Association, during the past year, your Directors believe, will compare favourably with those of any former year, and are worthy of the high reputation this Association has so long sustained. The fall exhibition was certainly never equalled by that of any former year. The competition was greater: there was a better representation in all the classes of animals and articles embraced in the prize list, which was considerably extended —a larger attendance, and, consequently, a larger amount collected at the gate than ever before.

One cloud darkens the horizon of the year. Your directors refer to the lamented death of their valued colleague, the late Robert Beith, Esq., a gentleman occupying a foremost place among the agriculturists of the Province—one who, for many years, had been among the ablest and best promoters of this Association, and in whose sudden and untimely death this Association must feel, as your Directors do, that they have sustained an irreparable loss.

The branch societies in connection with this Association, your Directors believe, are all in a prosperous state, although they have not, with one exception, returned their report to your secretary previous to this meeting, as the law directs.

Carturight.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		165 70	
" 214 Members' Subscriptions		214 00	
" Legislative Grant		128 40	
			508 10
Cr.			
By Prizes for Live Stock	156 00		
" " Field Products	21 25		
" " Dairy "	6 00		
" " Horticultural Products	5 75		
" " Agricultural Implements	5 00		
" " Arts and Manufactures	43 25		
" " Growing Crops	65 00		
		302 25	
" Preparing Show Grounds		40 00	
" Working Expenses		65 00	
			407 25
Balance in hand			100 85

Clarke.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		123 20	
" Members' Subscriptions		163 00	
" Admissions to Show		171 70	
" Legislative Grant		96 60	
" Municipal Grant		70 00	
			624 50
Cr.			
By Prizes for Live Stock	194 25		
" " Field Products	34 00		

	$ cts.	$ cts.	$ cts.
By Prizes for Dairy Products	13 75		
" " Horticultural Products	30 00		
" " Agricultural Implements	21 00		
" " Arts and Manufactures	53 00		
		346 00	
" Preparing Show Grounds		53 89	
" Agricultural Publications		20 00	
" Working Expenses		60 57	
			480 46
Balance in hand			144 04

Darlington.

Dr.	$ cts.	$ cts.	$ cts.
To 210 Members' Subscriptions		257 00	
" Admissions to Show		374 14	
" Legislative Grant		140 00	
" Municipal Grant		25 00	
" Miscellaneous Receipts		39 14	
			835 28
Cr.			
By Balance due Treasurer		189 61	
" Prizes for Live Stock	292 75		
" " Field Products	36 75		
" " Dairy "	18 00		
" " Horticultural Products	79 25		
" " Agricultural Implements	25 50		
" " Arts and Manufactures	86 37		
" " Growing Crops	16 00		
	554 62		
Unpaid	65 50		
		489 12	
" Prizes of Previous Year		64 50	
" Agricultural Publications		65 90	
" Working Expenses		40 18	
			849 31
Balance due Treasurer			14 03

REPORT.

Your Directors tender to the members of this Society their congratulation on the termination of the labours of another year—a year that has been, on the whole, more than ordinarily prosperous, notwithstanding the long and severe drought, which for some time seriously threatened the entire destruction of the crops.

By the death of the late Robert Reith, Esq., on the 11th June, your Directors lost the counsel of a valued colleague—this Society one of its oldest and firmest supporters—the agriculturists of the Province a competitor who, by his judgment and enterprize, had won for himself a foremost place amongst them—and all who had the pleasure of his acquaintance, a loved and valued friend.

Early in the year your Directors entered into an arrangement with the Directors of the Bowmanville Horticultural Society, to unite the Fall Exhibitions of the two Societies. The arrangement was successfully carried out, under the direction of a joint committee of the two Societies. The Exhibition was one of superior excellence—perhaps unsurpassed by any similar exhibition in the country. Your Directors regret to add that, *financially*, the project was not so favourable to this Society as they had been led to hope. The understanding was, that the Horticultural Society was to pay the prizes of their summer exhibition out of their income for the year, and pay over the balance to this Society. In consideration of this arrangement,

$30 was added to our prize list, to accommodate the members of that Society, but all we have recovered from them, as will be seen by your Treasurer's statement, is $4.14.

Some effort has been made during the year to collect the large amount of subscriptions allowed to fall in arrear, but with slight results, $15 only having been secured out of the $118 reported at last annual meeting. As there is no probability of any more being realized, your Directors have ordered the balance ($103) to be cancelled. It is hoped that good care will be taken that no such imposition on the Society is repeated.

Your Treasurer's account shows the gratifying fact, that, though your Society is still heavily in debt, the indebtedness has been reduced during the year to the amount of $120.49.

Bowmanville Horticultural Society.

[The returns of this society are incomplete. A summer show was held, at which $37.75 were awarded in prizes, and the Society united with the Agricultural Society of Darlington for a Fall Exhibition, which appears to have been very successful. The following is the report:]

The Directors, in submitting their Annual Report of the proceedings and present finances of this Society, beg to say that, since our last Annual Meeting, we have had two very successful Exhibitions of this Society, the Summer and Fall, the last of which was a Union Exhibition with the Township of Darlington Agricultural Society—which was a great success, and resulted in mutual benefit to both societies, and was conducted in the most friendly and harmonious manner. Well knowing the object of both is the same, namely, to procure and disseminate throughout our fair country the very best kinds of fruits, roots, and field and garden vegetables, &c., of every variety, and to adorn and beautify our homes and country with everything that is lovely in Nature. And, to effect this object, we are happy to say that several members of this Society are actively engaged in procuring seeds of most, if not all, of the newest and best varieties to be found on the globe, and we find the effect of honest amiable competition is surprising, each trying to excel. And it is a fact that many of our gardens have more than doubled their produce and profits during the last three years.

The funds of the Society now in the Treasurer's hands amount to $45.88, and no indebtedness.

The Directors now urge all our members and friends to take courage, and invite and solicit all their friends and neighbours at once to become members, and exert their powers of mind and body to the procuring and cultivation of the choicest fruits, vegetables and flowers, which our rich soil is capable of producing.

ELGIN, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		289 63	
" 119 Members' Subscriptions		119 00	
" Admissions to Show		127 70	
" Legislative Grant		700 00	
" Miscellaneous Receipts		10 00	
			1246 33
Cr.			
By Prizes for Live Stock	275 20		
" " Field Products	36 57		
" " Dairy "	16 75		
" " Horticultural Products	19 35		
" " Arts and Manufactures	31 00		
	378 87		
" " Unpaid	43 81		
		335 06	
Prizes of previous year		67 60	
" Legislative Grant to Township Societies		419 00	

	$ cts.	$ cts.
By Working Expenses	81 59	
		903 25
Balance in hand		343 08

REPORT.

* * * * *

Both the Spring and Fall Shows have been fully equal to those of former years, although there was a visible falling off in the root and vegetable classes, which was partly attributable to the great drought of last season, and partly to the spirit of rivalry between the Township and County Shows. It is much to be regretted that the members of the several Township Societies will not, as a general rule, join the parent Society, but the whole effort on their part seems to be to vie with, and make the Township Shows excel that of the County Exhibition. In the class for Agricultural Implements, there was not a single entry made last Fall, although the prizes offered were very liberal and several other classes, in which large premiums were offered, were not represented at all, owing to which the large balance above named remains in the Treasurer's hands. The Bureau of Agriculture and Arts have from time to time furnished this Society with a series of questions relative to the number of acres under the various grain and root crops, and the yield per acre in this Electoral Division, and requested a return thereof; and the Secretary of this Society duly forwarded the same to the various Township Branch Societies requesting to have the queries answered and returned at once. Only two Township Societies made a return to this Society, from which the Secretary made an average return to the Department and as a matter of course the information so returned cannot be correct or reliable without a full return from each Township Society in the Electoral Division. There is no doubt but the influence of this society has been felt throughout the whole Electoral Division, and is evidenced by the improved breeds of cattle pigs and sheep to be seen now on almost every farm; and it is a matter of deep regret that the membership does not increase in proportion to the visible improvement of all kinds of stock and agricultural implements.

Brigham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		52 73	
" 118 Members' Subscriptions		118 00	
" Legislative Grant		123 45	
			294 18
Cr.			
By Prizes for Live Stock	138 92		
" Field Products	35 10		
" Dairy "	6 00		
" Horticultural Products	13 19		
" Agricultural Implements	3 00		
" Arts and Manufactures	26 71		
	222 92		
" Unpaid	17 51		
		205 41	
" Preparing Show Grounds		1 22	
" Working Expenses		41 23	
			247 86
Balance in hand			46 32

Dorchester, South.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		5 68	
" 60 Members' Subscriptions		60 00	

	$ cts.	$ cts.	$ cts.
To Legislative Grant		63 00	
" Miscellaneous Receipts		2 00	
			130 68
Cr.			
By Prizes for Live Stock	60 75		
" Field Products	22 00		
" Dairy "	12 75		
" Horticultural Products	3 00		
		98 50	
" Preparing Show Ground		1 75	
" Working Expenses		27 26	
			127 51
Balance in hand			3 17

Malahide.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		75 28	
" 102 Members' Subscriptions		102 00	
" Admissions to Show		50 19	
" Legislative Grant		107 00	
			334 47
Cr.			
By Prizes for Live Stock	121 49		
" Field Products	27 99		
" Horticultural Products	4 92		
" Agricultural Implements	14 00		
" Arts and Manufactures	35 26		
		203 66	
" Preparing Show Grounds		3 25	
" Working Expenses		42 12	
			249 03
Balance in hand			85 44

Yarmouth.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		77 71	
" 119 Members' Subscriptions		122 00	
" Legislative Grant		126 50	
			326 21
Cr.			
By Prizes for Live Stock	147 66		
" " Field Products	20 51		
" " Dairy "	6 00		
" " Horticultural Products	5 82		
" " Agricultural Implements	5 50		
" " Arts and Manufactures	20 95		
	206 44		
" " Unpaid	23 09		
		183 35	
" Prizes of previous year,		20 52	
" Working Expenses		50 69	
			254 56
Balance in hand			71 65

ELGIN, WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		213 57	
" 192 Members' Subscriptions		192 00	
" Admissions to Show		261 61	
" Legislative Grant		700 00	
" Miscellaneous Receipts		35 36	
			1402 54
Cr.			
By Prizes for Live Stock	318 05		
" " Field Products	37 75		
" " Dairy "	21 50		
" " Horticultural Products	17 11		
" " Agricultural Implements	52 50		
" " Arts and Manufactures	53 35		
	500 26		
" " Unpaid	6 50		
		493 76	
" Prizes of past year		78 50	
" L. G. to Township Societies		280 00	
" Preparing Show Grounds		46 50	
" Working Expenses		226 96	
			1125 72
Balance in hand			276 82

Aldborough.

Dr.	$ cts.	$ cts.	$ cts.
To 143 Members' Subscriptions		143 00	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
" Proceeds Sale of Live Stock		190 00	
			493 00
Cr.			
By Balance due Treasurer		76 59	
" Prizes for Live Stock	92 95		
" " Field Products	14 55		
" " Dairy "	2 00		
" " Horticultural Products	3 60		
" " Arts and Manufactnres	21 25		
" " Ploughing Match	6 00		
	140 35		
" " Unpaid	33 59		
		106 76	
" Prizes of past year		6 80	
" Interest on Notes		25 00	
" Working Expenses		62 50	
			277 65
Balance in hand			215 35

Southwold and Dunwich.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		51 75	
" 282 Members' Subscriptions		282 00	
" Admission to Show		30 00	

	$ cts.	$ cts.	$ cts.
To Legislative Grant		140 00	
" Proceeds Sale of Stock and use of Bulls		408 73	
" Miscellaneous Receipts		78 00	
			950 48
Cr.			
By Prizes for Live Stock	94 20		
" " Field Products	28 00		
" " Dairy	8 50		
" " Horticultural Products	7 00		
" " Agricultural Implements	8 00		
" " Arts and Manufactures	35 80		
	181 50		
" " Unpaid	9 85		
		171 65	
" Prizes of past year		4 85	
" Preparing Show Grounds		20 00	
" Purchase of Live Stock		487 03	
" Working Expenses		270 60	
			95 13
Balance due Treasurer			3 65

ESSEX.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		264 61	
" 114 Members' Subscriptions		114 00	
" Admissions to Show		123 92	
" Legislative Grant		700 00	
" Miscellaneous Receipts		65 80	
			1268 33
Cr.			
By Prizes for Live Stock	182 15		
" " Field Products	56 34		
" " Dairy "	11 00		
" " Horticultural Products	19 75		
" " Agricultural Implements	4 12		
" " Arts and Manufactures	50 05		
		323 41	
" Legislative Grant to Township Societies		418 29	
" Preparing Show Grounds		125 85	
" Working Expenses		136 99	
			1004 54
Balance in hand			263 79

REPORT.

The Annual Exhibition of the Society, which was held in the Town of Windsor, on the fourth and fifth days of October last, was merely a counterpart of the shows of former years. Nothing exhibited deserved special mentioning, except some very useful farming implements and machinery. The attendance was greater, and the proceeds taken at the gate, were in excess of previous occasions.

The Directors are happy to make a favourable report in respect to the crops throughout the County for 1871. The fall wheat was exceedingly good, both in quality and yield;

spring wheat was not so good; oats, a fair average crop; Indian corn in some localities was rather poor, while in others it was an excellent crop, the yield on the whole being a good average; barley, about average; hay, owing to the early drought, proved to be a very thin crop, but what was of it was secured without injury from wet.

Owing to the great fright occasioned by the appearance of the Colorado Potato Beetle along our shores, the usual quantity of potatoes was not planted last season as heretofore. Of those fields that were planted, some were almost completely destroyed, while others suffered little or no injury. Their ravages were not wide-spread, but confined to particular localities, or even fields; while one person's crop was eaten off to the ground, his neighbour's, probably, suffered little or nothing. This, no doubt, was occasioned by the greater vigilance of the latter over the former; one was constantly watching and destroying the pests, while the other allowed them free scope in their work of destruction. With constant watchfulness on the part of all, their ravages would be comparatively trifling, and good crops of this most excellent article of food insured.

The fruit crop was generally below an average; this no doubt was owing to the severe frosts in the spring, while the fruit was forming, combined with the extraordinary dry summer and fall.

In addition to the crops a large quantity of pork has been produced, in the fattening of which an immense quantity of Indian corn has been consumed; we cannot but feel that this is the legitimate mode of disposing of all the coarser grains raised by the farmer. If the farmer would consume all of his coarser grains on the farm, by the feeding and fattening of stock, he no doubt would realise far greater profits, than by selling his grain, as many do, to the distiller, and have it turned into an article the use of which does no good to the human race, but is the cause of nine-tenths of all the misery, degradation, and crime throughout the land.

The Directors would call attention to the most remarkably dry season of 1871, the counterpart of which is not within the recollection of the oldest inhabitant, commencing as it did in the early part of the season, and continuing up to the last day of the old year. The results have been injurious to the interests of the farmers and community generally—wells and living springs became dry that never have been known to fail before; many farmers kept their teams constantly drawing water for house use and for stock, some travelling the distance of eight or ten miles to the lake or river to procure it; pastures became dry and parched, and, in consequence, all kinds of stock became thin and poor, in an ill state to commence a long and tedious winter.

Very little fall wheat was sown, many farmers could not even plough their ground; that which was sown presented a very sad appearance at the commencement of winter.

In consequence also of the drought many disastrous fires raged throughout the County: the marshes, from which large quantities of hay were annually gathered and secured, were burnt out and injured to such an extent that it will require years to recover; the woods also suffered, and much choice and valuable timber was injured and destroyed.

The extreme dryness of the season also led to the destructive fires of Sandwich and Windsor, much valuable property in each of those places was destroyed, the loss of which must be seriously felt for some time to come. On the whole the loss to the County through these causes alone must in a great measure counterbalance the advantages derived from the fair crops of 1871.

The Directors think it would not be out of place to notice the increase in the population of this County since the census of 1861, especially as it may have a marked effect in the future upon the agricultural interests of the County, by giving us two Electoral Divisions, and consequently, two Agricultural Societies

From the returns the increase of the County since the last census is about seven thousand or about twenty-eight per cent., while the increase in the whole Province during the same period is less than seventeen per cent., or a difference of eleven per cent. in favour of Essex; and what is more remarkable, is the fact that the Townships bordering on the Detroit River are old settled localities, incapable of little, if any increase, so that setting aside the older portions of the County, the newer portions must have increased at the rate of fifty per cent during the last ten years.

A large influx of settlers has taken place in the County during the last few years, and the prospects are that larger numbers will enter during the incoming year.

The certainty of the Canada Southern Railway running through to the Detroit River, is

settled beyond dispute, and running as it will through the centre of the unsettled portions of the County, it will be instrumental in opening up, and rendering those lands fit for settlement, that from their isolated position were thought to be at one time almost inaccessible.

The Directors regret that more interest is not taken by the community, generally, throughout the County, in support of the various Agricultural Societies, the burden of keeping those Societies in operation falls upon a few individuals, while the benefits derived therefrom are shared in by all; the improvement in stock has been mainly caused by the exertions of the different Township Societies since their formation; improved horses, thoroughbred Durham, Devon and Ayrshire cattle, and improved Southdown, Leicester, and Cotswold sheep have been introduced from time to time; it is not too much to say, that since the organization of Township Societies, the sum of twenty thousand dollars has been expended for this object alone, and this solely through the labours of a few individuals in each Township; the great mass of the inhabitants refusing to unite through some trifling excuse, unworthy of men to offer; yet, do not refuse to participate in benefits conferred on them through the disinterested labours of their more unselfish neighbours.

Why should such a state of things exist? Why should one man without contributing one cent, reap the same benefit in an improvement, with the man who both spends time and money in the furtherance of that improvement.

The average annual membership of the Township Societies does not, probably, exceed three hundred, or one to about every eighteen or twenty ratepayers.

If a tax could be levied upon all ratepayers, in each Township of the County of, say, one dollar each, it would be but just; one-half to go into the funds of the County Society, the other half to the respective Societies of the Townships in which the tax was levied, this would give us the sum of about five thousand dollars yearly, instead of the paltry sum subscribed by the few members who belong to them; all parties would then contribute alike, be interested and favoured alike; this sum of one dollar—we should bear in mind, is only one-half of what is now paid by members to the Township and County Societies. No doubt, many would object to a tax being levied indiscriminately on all, but such a tax could not be more objectionable than the present dog tax, the proceeds of which are devoted to the payment of losses sustained in one branch of Agriculture, namely, sheep-husbandry, or the statute-labour tax, which is applied on the roads; if it is right to tax for these two objects, it surely would not be wrong or impracticable to tax for the great and more paramount Agricultural interest of the County.

Upon the whole, we have much to be thankful for, in the past, while the future of the County is encouraging and full of hope.

Nature has done much for us by giving us a healthy and agreeable climate, and a soil of surpassing fertility. Let man but do his part with a persevering and determined will, and with a firm reliance on the bountiful Giver of all Good, and soon the "wilderness shall blossom as the rose," "the waste places be made glad," the fields and orchards will laugh and rejoice, and the barns and granaries of the farmers will groan with the golden and boundless productions thereof.

Colchester.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		38 56	
" Members' Subscriptions		63 00	
" Legislative Grant		41 61	
" Proceeds Sale of Live Stock		555 62	
" Borrowed for Purchase of Bulls		300 00	
			998 79
Cr.			
By Purchase of Live Stock		492 30	
" Paid on note for a Horse		115 99	
" Cash and notes for Stock		358 00	
" Working Expenses		32 50	
			998 79

Gosfield and Mersea.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		161 88	
" 150 Members' Subscriptions		150 00	

	$ cts.	$ cts.
To Legislative Grant	109 50	
" Proceeds Sale of Live Stock	415 12	
" Miscellaneous Receipts	277 50	
		1114 00
Cr.		
By Bills for Purchase of Stock	150 00	
" Purchase of Live Stock	697 57	
" Due Treasurer	152 52	
" Working Expenses	35 35	
		1035 44
Balance in hand		78 56

Malden and Anderson.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		168 41	
" 32 Members' Subscriptions		41 00	
" Legislative Grant		29 93	
" Proceeds Sale of Live Stock		27 00	
			266 34
Cr.			
By Purchase of Live Stock		186 10	
" Agricultural Publications		34 50	
" Working Expenses		21 74	
			242 34
Balance in hand			24 00

Maidstone.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		54 68	
" 82 Members' Subscriptions		82 00	
" Legislative Grant		59 13	
" Proceeds Sale of Stock		43 00	
" Miscellaneous Receipts		3 80	
			242 61
Cr.			
By Prizes for Live Stock		16 00	
" Purchase of Stock		107 00	
" Working Expenses		14 50	
			137 50
Balance in hand			105 11

Rochester.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		177 00	
" Legislative Grant		129 21	
" Proceeds Sale of Stock		30 00	
			336 21
Cr.			
By Balance due Treasurer		3 26	
" Prizes for Live Stock	15 00		
" " Field Products	3 50		
" " Dairy "	1 00		
" " Agricultural Implements	1 00		

	$ cts.	$ cts.	$ cts.
	20 50		
Unpaid...	18 00		
		2 50	
By Purchase of Stock		215 00	
" Working Expenses		22 00	
			242 76
Balance in hand			93 45

Tilbury, West.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		68 90	
" 60 Members' Subscriptions		67 00	
" Admissions to Show		3 25	
" Legislative Grant		48 91	
" Proceeds Sale of Stock		36 00	
			224 06
Cr.			
By Prizes for Live Stock	41 75		
" " Field Products	11 50		
" " Dairy "	75		
" " Horticultural Products	6 00		
" " Agricultural Implements	1 25		
" " Arts and Manufactures	3 50		
" " Growing Crops	64 75		
" " Unpaid	41 25		
		23 50	
" Prizes of previous year		16 13	
" Purchase of Live Stock		75 00	
" Working Expenses		10 14	
			124 77
Balance in hand			99 29

FRONTENAC.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		121 00	
" 186 Members' Subscriptions		187 00	
" Legislative Grant		700 00	
" Miscellaneous Receipts		16 00	
			1024 00
Cr.			
By Prizes for previous year		3 75	
" Legislative Grant to Township Societies		277 00	
" Insurance and Expenses in buildings		58 75	
" Members' Tickets to Provincial Exhibition		187 00	
" Working Expenses		66 78	
			593 28
Balance in hand			430 72

Note.—In consequence of the Provincial Exhibition having been held this year in Kingston the County Society had no show.

Pittsburgh.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 98	
" Members' Subscriptions		19 00	
" Legislative Grant		72 00	
			92 98
Cr.			
By Working Expenses			14 00
Balance in hand			78 98

Storington.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		4 76	
" 30 Members' Subscriptions		45 00	
" Legislative Grant		100 00	
			149 76
Cr.			
By Prizes for Live Stock	87 25		
" " Field Products	13 11		
" " Dairy "	10 00		
" " Horticultural Products	3 61		
" " Agricultural Implements	3 50		
" " Arts and Manufactures	16 85		
		134 32	
" Working Expenses		12 42	
			146 74
Balance in hand			3 02

GLENGARRY.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		25 18	
" Members' Subscriptions		199 00	
" Admissions to Show		159 50	
" Legislative Grant		700 00	
			1083 68
Cr.			
By Prizes for Live Stock	268 00		
" " Field Products	72 00		
" " Dairy "	55 88		
" " Horticultural Products	6 77		
" " Agricultural Implements	73 75		
" " Arts and Manufactures	74 62		
		551 02	
" " Prizes of Previous Year		2 00	
" Legislative Grant to Township Societies		280 00	
" Preparing Show Grounds		159 50	
" Amount Paid for Incorporation		70 00	
" Working Expenses		124 16	
			1186 68
Balance due Treasurer			103 00

Charlottenburgh and Lancaster.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		140 20	
" 62 Members' Subscriptions		93 00	

	$ cts.	$ cts.	$ cts.
To Admissions to Show		5 00	
" Legislative Grant		140 00	
" Miscellaneous Receipts		84 37	
			462 57
Cr.			
By Prizes for Live Stock	181 00		
" " Dairy Products	15 00		
" " Growing Crops	75 00		
" " Ploughing Match	9 00		
		280 00	
" Working Expenses		41 00	
			321 00
Balance in hand			141 57

Lochiel and Kenyon.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 36	
" Members' Subscriptions		76 50	
" Legislative Grant		140 00	
			217 86
Cr.			
By Prizes for Live Stock	94 70		
" " Field Products	50 50		
" " Dairy "	17 43		
" " Arts and Manufactures	15 00		
" " Ploughing Match	6 00		
		183 63	
" Working Expenses		25 29	
			208 92
Balance in hand			8 94

GRENVILLE, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		346 70	
" 233 Members' Subscriptions		233 00	
" Admissions to Show		321 75	
" Legislative Grant		700 00	
" Proceeds Rent of Booths		51 50	
" W. Shanly, M.P., donation		40 00	
			1692 95
Cr.			
By Prizes for Live Stock	214 50		
" " Field Products	130 00		
" " Dairy "	37 00		
" " Horticultural Products	63 00		
" " Agricultural Implements	60 00		
" " Arts and Manufactures	110 00		
		614 50	
" Legislative Grant to Township Societies		140 00	
" Preparing Show Grounds		191 45	
" Lisgar Rifle Band		50 00	
" Printing, &c		75 43	
" Agricultural Publications		12 80	

	$ cts.	$ cts.
By Working Expenses	274 02	
		1358 20
Balance in hand		334 75

REPORT.

The President and Directors of the South Grenville Agricultural Society beg leave to report that the fourteenth annual Exhibition of the Society was held at Prescott, on Tuesday, Wednesday and Thursday, the 19th, 20th and 21st days of September last.

The weather upon the whole was favourable, a sufficient quantity of rain having fallen on the first day to lay the dust, which made the following days fine, and all that could be desired.

Your Directors thought it necessary in preparing for the Exhibition this year, to expend a large sum of money in making extensive repairs to the grounds, fences and buildings, which for some years back have been in a ruinous and unsafe condition. This expenditure was not made for mere temporary repairs but for permanent improvements that will remain good for many years.

On one particular, the improvements of the present year, that is, outside seats interspersed around the buildings and about the grounds, seemed to be highly appreciated, and taken advantage of, more especially by the lady visitors.

The number of members for the current year was 233, being 51 less than the previous year. The number of entries in the various classes was 1186, being 104 less than in 1870 The money taken at the gates for admission to the grounds was $321·75, being less than half of what was taken last year. The deficiency at the gates in a great measure arose from a circumstance over which your Directors had no control. A large combined menagerie and circus was exhibiting at Prescott on the second, and principal day of the fair, which naturally drew away a large proportion of the visitors who would otherwise have attended. This adverse circumstance your Directors could neither foresee nor prevent.

On all the stock classes, there was a considerable falling off in the number of entries, but the animals shown were more select, many of them being of a very superior description. It must also be admitted that one of the wings of the Exhibition, the one generally used for hardware and cabinetware—were but poorly filled up.

The cause of this no doubt arises from the difficulty and danger of damage in moving valuable furniture and heavy hardware, and unless the prizes on this description of goods be somewhat increased, manufacturers cannot be expected to expose their property to risk. The fine arts and ladies' departments were filled to overflowing, and the general opinion expressed was that the articles exhibited were of a very superior class. The great complaint in this Department is the want of room. Many valuable articles have to be crowded and huddled together in such a way that they can scarcely be seen, greatly to the annoyance of exhibitors as well as visitors.

The extensive decorations, which required a great deal of time, taste and skill to arrange, and the beautiful display of fruits and flowers in the centre part of the building were far ahead of anything that has ever been seen at any Exhibition since the Society had an existence.

Garden vegetables were excellent and plentiful. Field roots, with the exception of potatoes, were a little smaller than common, on account of the dry season. Dairy Products were a little short in quantity, but excellent in quality.

The samples of grain shown were up to the average of former years in quantity, and for quality and purity were certainly very creditable to this section of country. Notwithstanding what has been said above, your Directors have no hesitation in saying that the Exhibition of 1871 would compare favourably with those of former years.

Edwardsburgh.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		8 09	
" Members' Subscriptions		78 56	

	$ cts.	$ cts.	$ cts.
To Admissions to Show		52 50	
" Legislative Grant		139 81	
			278 96
Cr.			
By Prizes for Live Stock	82 50		
" " Field Products	71 00		
" " Dairy "	11 00		
" " Horticultural Products	51 00		
" " Arts and Manufactures	29 00		
		224 50	
" Working Expenses		36 00	
			260 50
Balance in hand			18 46

GREY, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		47 98	
" 148 Members' Subscriptions		155 50	
" Admissions to Show		47 00	
" Legislative Grant		700 00	
" Municipal Grant		200 00	
" Miscellaneous Receipts		10 00	
			1160 48
Cr.			
By Prizes for Live Stock	228 00		
" " Field Products	72 00		
" " Dairy	22 50		
" " Horticultural Products	24 50		
" " Agricultural Implements	43 00		
" " Arts and Manufactures	32 00		
	422 00		
Unpaid	70 50		
		351 50	
" Legislative Grant to Township Societies		417 72	
" Preparing for Show Grounds		202 58	
" Working Expenses		96 52	
			1068 32
Balance in hand			92 16

Collingwood.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		5 95	
" 164 Members' Subscriptions		168 00	
" Admissions to Show		45 50	
" Legislative Grant		97 35	
" Municipal Grant		13 00	
			329 80
Cr.			
By Prizes for Live Stock	119 00		
" " Field Products	32 25		
" " Dairy "	21 00		
" " Horticultural Products	13 75		

	$ cts.	$ cts.	$ cts.
By Prizes for Agricultural Implements	34 50		
" " Arts and Manufactures	28 75		
" " Ploughing Match	23 00		
		272 25	
" Preparing Show Grounds		3 31	
" Working Expenses		51 48	
			327 04
Balance in hand			2 76

Derby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		10 42	
" 80 Members' Subscriptions		80 00	
" Admissions to Show		4 50	
" Legislative Grant		46 00	
" Miscellaneous Receipts		6 35	
			147 27
Cr.			
By Prizes for Live Stock	63 75		
" " Field Products	21 00		
" " Dairy "	8 75		
" " Horticultural Products	6 00		
" " Agricultural Implements	5 50		
" " Arts and Manufactures	14 25		
		119 25	
" Working Expenses		27 91	
			147 16
Balance in hand			0 11

Euphrasia.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		78 05	
" Admissions to Show		21 51	
" Legislative Grant		36 00	
" Municipal Grant		20 00	
" Miscellaneous Receipts		19 94	
			175 50
Cr.			
By Prizes for Live Stock	79 00		
" " Field Products	18 75		
" " Dairy "	3 00		
" " Horticultural Products	6 00		
" " Agricultural Implements	11 00		
" " Arts and Manufactures	11 50		
" " Ploughing Match	35 00		
		164 25	
" Working Expenses		11 65	
			175 90
Balance due Treasurer			0 40

Holland and Sullivan.

Dr.	$ cts.	$ cts.	$ cts.
To 108 Members' Subscriptions		109 00	
" Legislative Grant		64 31	
			173 31

	$ cts.	$ cts.	$ cts.
Cr.			
By Prizes for Live Stock	60 00		
" " Field Products	38 50		
" " Dairy "	5 50		
" " Horticultural Products	6 00		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	13 75		
		127 75	
" Working Expenses		29 70	
			157 45
Balance in hand			15 86

St. Vincent.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		41 72	
" 117 Members' Subscriptions		136 00	
" Admissions to Show		18 30	
" Legislative Grant		69 00	
" Miscellaneous Receipts		29 00	
			294 02
Cr.			
By Prizes for Live Stock	93 00		
" " Field Products	26 50		
" " Dairy "	4 50		
" " Horticultural Products	5 25		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	21 05		
" " Ploughing Match	38 00		
	198 30		
" " Unpaid	2 55		
		195 75	
" " Prizes of last year		25 75	
" " Working Expenses		38 78	
			260 28
Balance in hand			33 74

Sydenham.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		29 43	
" 84 Members' Subscriptions		84 00	
" Admissions to Show		5 05	
" Legislative Grant		50 40	
" Municipal Grant		20 00	
			180 88
Cr.			
By Prizes for Live Stock	57 50		
" " Field Products	19 00		
" " Dairy "	7 75		
" " Horticultural Products	11 00		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	4 75		
		103 00	
" Prizes of previous year		11 50	
" Preparing Show Grounds		3 15	

	$ cts.	$ cts.
By Subscription to County Society	10 00	
" Working Expenses	34 13	
		161 78
Balance in hand		27 10

NOTE.—In consequence of the dryness of the season, the exhibition was below an average, but the quality of the grains and roots was much better than might have been anticipated.

Owen Sound Horticultural Society.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		76 92	
" 95 Members' Subscriptions		101 00	
" Admissions to Show		38 15	
" Legislative Grant		56 05	
" Miscellaneous Receipts		6 89	
			279 01
CR.			
By Prizes for Fruits	27 50		
" " Flowers and Plants	20 50		
" " Vegetables	55 00		
" " Arts and Manufactures	21 00		
		124 00	
" Preparing for Exhibition		19 00	
" Working Expenses		113 00	
			256 19
Balance in hand			22 82

GREY, SOUTH.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		60 70	
" 64 Members' Subscriptions		70 00	
" Admissions to Show		17 90	
" Legislative Grant		700 00	
" Municipal Grant		200 00	
" Extra Prizes for Wheat		140 00	
" Miscellaneous Receipts		47 31	
			1235 91
CR.			
By Prizes for Live Stock	248 50		
" " Field Products	218 50		
" " Dairy "	45 00		
" " Horticultural Products	20 50		
" " Agricultural Implements	41 00		
" " Arts and Manufactures	28 50		
	602 00		
Unpaid	11 00		
		591 00	
" Legislative Grant to Township Societies		419 85	
" Preparing Show Grounds		15 35	
" Working Expenses		108 13	
			1134 33
Balance in hand			101 58

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NOTE:—In this Electoral Division there are eight Township Societies which, with that of the County, are producing a salutary influence on the improvement of Agriculture.

Artemesia.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		29 34	
" 57 Members' Subscriptions		57 00	
" Admissions to Show		2 05	
" Legislative Grant		35 75	
" Municipal Grant		10 00	
			134 14
CR.			
By Prizes for Live Stock	60 75		
" " Field Products	24 00		
" " Dairy "	1 75		
" " Horticultural Products	4 50		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	12 00		
		106 00	
" Working Expenses		10 09	
			116 09
Balance in hand			18 05

Bentinck.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		49 03	
" 68 Members' Subscriptions		68 00	
" Legislative Grant		39 83	
" Municipal Grant		20 00	
			176 86
By Prizes for Live Stock	69 75		
" " Field Products	22 75		
" " Dairy "	8 00		
" " Horticultural Products	9 25		
" " Arts and Manufactures	3 00		
		112 75	
" Glenelg, for Union Fund		17 00	
" Working Expenses		16 89	
			146 64
Balance in hand			30 22

Egremont.

DR	$ cts.	$ cts.	$ cts
To Balance in hand		100 01	
" 125 Members' Subscriptions		136 00	
" Admissions to Show		2 30	
" Legislative Grant		90 45	
			328 76
CR.			
By Prizes for Live Stock	89 25		
" " Field Products	29 50		
" " Dairy "	12 25		
" " Horticultural Products	9 50		
" " Agricultural Implements	13 00		
" " Arts and Manufactures	32 50		
		186 00	

	$ cts.	$ cts.	$ cts.
By Preparing Show Grounds		12 50	
" Working Expenses		38 41	
			236 91
Balance in hand			91 85

Glenelg.

Dr.	$ cts.	$ cts.	$ cts.
To 63 Members' Subscriptions		63 00	
" Legislative Grant		40 50	
" Municipal Grant		20 00	
			123 50
Cr.			
By Prizes for Live Stock	65 25		
" " Field Products	21 50		
" " Dairy "	6 00		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	10 90		
		105 65	
" " Working Expenses		25 75	
			131 40
Balance due Treasurer			7 90

Melancthon.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		14 02	
" 52 Members' Subscriptions		52 00	
" Admissions to Show		12 15	
" Legislative Grant		37 12	
			115 29
Cr.			
By Prizes for Live Stock	40 00		
" Field Products	8 25		
" Dairy "	6 25		
" Horticultural Products	10 25		
" Agricultural Implements	6 75		
" Arts and Manufactures	16 50		
		88 00	
" Preparing Show Grounds		15 00	
" Working Expenses		26 15	
			129 15
Balance due Treasurer			13 86

Normanby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		61 51	
" 152 Members' Subscriptions		152 00	
" Admissions to Show		8 80	
" Legislative Grant		102 60	
" Municipal Grant		25 00	
" Proceeds Sale of Stock		131 00	
			480 91
Cr.			
By Prizes for Live Stock	77 00		
" Field Products	33 75		
" Dairy "	8 00		

	$ cts.	$ cts.	$ cts.
By Horticultural Products	7 25		
" Agricultural Implements	9 00		
" Arts and Manufactures	25 00		
		160 00	
" Purchase of Live Stock		159 00	
" Working Expenses		65 36	
			384 36
Balance in hand			96 55

NOTE.—The Exhibition in the fall was successful. Larger premiums are recommended for pure bred stock, as the most likely means of effecting improvement in that direction.

Osprey.

DR.	$ cts.	$ cts.	$ cts.
To 64 Members' Subscriptions		64 00	
" Admissions to Show		4 00	
" Legislative Grant		36 45	
			104 45
CR.			
By Balance due Treasurer		4 45	
" Prizes for Live Stock	33 75		
" " Field Products	21 75		
" " Dairy "	1 50		
" " Horticultural Products	0 75		
" " Agricultural Implements	4 25		
" " Arts and Manufactures	11 87		
		73 87	
" Working Expenses		20 68	
			99 00
Balance in hand			5 45

Proton.

DR.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		54 00	
" Admissions to Show		4 00	
" Legislative Grant		37 12	
" Municipal Grant		10 00	
			105 12
CR.			
By Balance due Treasurer		1 70	
" Prizes for Live Stock	36 00		
" " Field Products	14 50		
" " Dairy "	4 50		
" " Arts and Manufactures	16 25		
		71 25	
" Preparing Show Grounds		6 50	
" Working Expenses		9 33	
			88 78
Balance in hand			16 34

HALDIMAND.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		84 49	
" Members' Subscriptions		132 00	
" Admissions to Show		70 00	
" Legislative Grant		700 00	
" Municipal Grant		50 00	
" Proceeds Sale of Agricultural Hall		220 00	
" Miscellaneous Receipts		15 00	
			1271 49
Cr.			
By Prizes for Live Stock	303 50		
" " Field Products	21 00		
" " Dairy "	7 50		
" " Horticultural Products	19 00		
" " Agricultural Implements	40 00		
" " Arts and Manufactures	29 50		
		420 50	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		397 07	
" Working Expenses		76 71	
			1308 28
Balance due Treasurer			36 79

REPORT.

In presenting our Report for the past year we have to regret an adverse balance stares us in the face, and in our justification beg to draw your attention to the improved condition of the show grounds: the fencing and improving of which, together with providing temporary accommodation for such articles of exhibition as required housing, involved us in a large and *somewhat unlooked for expenditure*. We trust that means will not be wanting in the present year for the purpose of providing a suitable hall in time for the next Show. We would also suggest that in order to economise funds for that purpose, a Spring Show should be dispensed with. The wants of such a Show were not, we are of opinion, as severely felt the past year as many anticipated, and mostly the animals usually exhibited at Spring Shows made their appearance at the Fall Show with great credit to the owners and the County, and also adding much to the success and appearance of that Show, making a distinguishing feature between the County and the Township Shows, and causing the County Show to assume somewhat the appearance of the Central Fairs, held now in many sections of this Province with great success.

We are further of opinion that the formation of a farmer's club is most desirable, and would greatly advance the agricultural interests of this County, the farming community at present being without any means of intercommunication, and standing thus at a great disadvantage when compared with all other industrial interests. Such a club could most advantageously discuss the introduction of improved stock and grain, and the general improvement of husbandry, and be to the farmers of this County a book in which all might read and learn.

Your Officers and Directors, in conclusion, have much pleasure in congratulating you on the general prosperity of this Province during the past year, in which this County has largely participated, and trust that, with the increased facilities being afforded us for communication, a new era awaits us, and that in the future march of events, though the pace in advance be rapid, the County of Haldimand Agricultural Society will not be found wanting.

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Dunn & S. Cayuga.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		0 84	
150 Members' Subscriptions		150 00	

	$ cts.	$ cts.	$ cts.
To Legislative Grant		90 12	
			240 96
Cr.			
By Prizes for Live Stock	117 00		
" " Field Products	43 25		
" " Agricultural Implements	22 25		
" " Arts and Manufactures	14 25		
		196 75	
" Prizes of Previous Year		22 25	
" Working Expenses		20 00	
			239 00
Balance in hand			1 96

Rainham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		51 00	
" 85 Members' Subscriptions		85 00	
" Admissions to Show		6 00	
" Legislative Grant		51 07	
			193 07
Cr.			
By Prizes for Live Stock	87 25		
" " Field Products	16 00		
" " Dairy "	3 25		
" " Horticultural Products	2 75		
" " Agricultural Implements	12 25		
" " Arts and Manufactures	7 80		
	129 30		
Unpaid	4 20		
		125 10	
" Prize of Last Year		1 50	
" Working Expenses		24 80	
			151 40
Balance in hand			41 67

Seneca, Oneida & N. Cayuga.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		6 36	
" 155 Members' Subscriptions		203 25	
" Legislative Grant		114 76	
" Municipal Grants		35 00	
			359 37
Cr.			
By Prizes for Live Stock	265 00		
" " Field Products	26 50		
" " Dairy "	14 00		
" " Horticultural Products	5 75		
" " Agricultural Implements	31 00		
" " Arts and Manufactures	23 50		
		365 75	
" Working Expenses		48 79	
			414 54
Balance due Treasurer			55 17

Walpole.

Dr.	$ cts	$ cts.	$ cts
To Balance in hand		96 77	
" Members' Subscriptions		285 00	
" Legislative Grant		164 00	
" Municipal Grant		200 00	
" Local Subscriptions		400 00	
			1145 77
Cr.			
By Prizes for Live Stock	261 50		
" " Field Products	38 00		
" " Dairy "	11 00		
" " Horticultural Products	7 50		
" " Agricultural Implements	44 00		
" " Arts and Manufactures	40 25		
" " Ploughing Match	15 00		
		417 25	
" Preparing Show Grounds		600 00	
" Working Expenses		48 50	
			1065 75
Balance in hand			80 02

HALTON.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		250 10	
" Members' Subscriptions		325 00	
" Admissions to Show		536 00	
" Legislative Grant		700 00	
" Municipal Grant		100 00	
" Proceeds Rent of Grounds		25 00	
			1936 10
Cr.			
By Prizes for Live Stock	452 50		
" " Field Products	62 00		
" " Dairy "	38 00		
" " Horticultural Products	39 50		
" " Agricultural Implements	66 50		
" " Arts and Manufactures	174 25		
" " Ploughing Match	56 00		
	888 75		
Unpaid	90 00		
		798 75	
" Prizes of Last Year		119 50	
" Preparing Show Grounds		258 48	
" Legislative Grant to Township Societies		419 78	
" Working Expenses		243 59	
			1840 10
Balance in hand			96 00

Esquesing.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		159 06	
" 214 Members' Subscriptions		245 50	

	$ cts.	$ cts.	$ cts.
To Admissions to Show		226 80	
" Legislative Grant		105 00	
			736 36
Cr.			
By Prizes for Live Stock	184 50		
" " Field Products	44 50		
" " Dairy "	12 50		
" " Horticultural Products	21 00		
" " Agricultural Implements	12 00		
" " Arts and Manufactures	63 00		
" " Ploughing Match	28 50		
		366 00	
" Preparing Show Grounds		39 56	
" Working Expenses		85 80	
			491 36
Balance in hand			245 00

Nassagaweya.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		9 73	
" 146 Members' Subscriptions		182 00	
" Legislative Grant		83 37	
" Miscellaneous Receipts		4 50	
			279 60
Cr.			
By Prizes for Live Stock	136 20		
" " Field Products	39 00		
" " Dairy "	11 75		
" " Horticultural Products	13 00		
" " Agricultural Implements	9 00		
" " Arts and Manufactures	17 75		
		226 70	
" Working Expenses		19 39	
			246 09
Balance in hand			33 51

Nelson.

Dr.	$ cts.	$ cts.	$ cts.
To 125 Members' Subscriptions		200 00	
" Admissions to Show		42 00	
" Legislative Grant		91 41	
			333 41
Cr.			
By Balance due Treasurer		3 00	
" Prizes for Live Stock	220 25		
" " Field Products	37 75		
" " Dairy "	17 00		
" " Horticultural Products	11 75		
" " Agricultural Implements	16 75		
" " Arts and Manufactures	24 25		
		327 75	
" " Working Expenses		42 00	
			372 75
Balance due Treasurer			39 34

Trafalgar.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		96 91	
" Members' Subscriptions		277 00	
" Admissions to Show		51 64	
" Legislative Grant		140 00	
" Municipal Grant		100 00	
" Miscellaneous Receipts		25 00	
			690 55
Cr.			
By Prizes for Live Stock	296 50		
" " Field Products	53 25		
" " Dairy	19 50		
" " Horticultural Products	22 75		
" " Agricultural Implements	17 00		
" " Arts and Manufactures	82 00		
" " Extras for Cattle	21 00		
		512 00	
" Preparing Show Grounds		40 94	
" Working Expenses		66 53	
			619 47
Balance in hand			71 08

HAMILTON.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		149 80	
" 105 Members' Subscriptions		132 50	
" Legislative Grant		350 00	
" Municipal Grant (City of Hamilton)		400 00	
" Special Subscription to Central Fair		2656 00	
" Amount received from Treasurer of Central Fair		2034 58	
			5722 88
Cr.			
Paid Treasurer of Central Fair		3606 00	
Working Expenses		128 74	
			3734 74
Balance in hand			1988 14

Note.—This Society amalgamated with the North and South Wentworth Societies for great Central Exhibition in Hamilton, with a prize list of $6000.

Hamilton, N. and S. Wentworth, Central Exhibition.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		27 00	
" 356 Members' Subscriptions		356 00	
" Admissions to Show		3458 41	
" For Special Prizes		450 50	
" Booths, Forage, and Lumber		708 52	
" From Treasurer of Hamilton E. D. Society		3606 00	
" " Treasurer N. Wentworth Society		865 00	
" " Treasurer S. Wentworth Society		853 36	
Donations		9 00	
			10333 79

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	2412 00		
" " Field Products	249 25		
" " Dairy "	147 00		
" " Horticultural Products	349 75		
" " Agricultural Implements	172 50		
" " Arts and Manufactures	794 75		
		4125 25	
" Prizes of Previous Year		23 50	
" Preparing Show Grounds		941 48	
" Working Expenses		2239 44	
			7329 67
Balance in hand			3004 12

Note.—This balance was paid as follows:—Hamilton Society received $2034.58, North Wentworth Society $488.14, and South Wentworth Society $481.40.

HASTINGS, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		241 25	
" 88 Members' Subscriptions		89 40	
" Legislative Grant		700 00	
" Miscellaneous Receipts		14 70	
			1045 35
Cr.			
By Prizes for Live Stock	178 45		
" " Field Products	69 00		
" " Dairy "	15 25		
" " Horticultural Products	16 75		
" " Agricultural Implements	78 40		
" " Arts and Manufactures	70 40		
		428 25	
By Legislative Grant to Township Societies		365 00	
" Preparing Show Grounds		2 00	
" Agricultural Publications		50 05	
" Working Expenses		72 61	
			917 91
Balance in hand			127 44

REPORT.

The President and Directors of North Hastings Agricultural Society for 1871 feel much pleasure in presenting their Annual Report for said Year, respecting the Exhibition held in the Township of Huntingdon, on the Madoc Gravel Road, October 11th, 1871. The day was very favourable for the Exhibition. The number of entries was about eleven hundred, notwithstanding that each member could only obtain one ticket on one sample of each enumerated article in Domestic Manufactures, Dairy, Farm and Garden Produce, Fancy Work, and Farming Implements. The Exhibition was far better than usual. There were a great many entries in horses, and the competition was so keen it was difficult for the judges in many cases to know which merited the prize. There were a few thorough-bred cattle at the Exhibition, and a great many entries of good grade cattle. Good grade cattle are very much on the increase in this part of the country, the cheese factories becoming so numerous, and seem to be more remunerative than continually cropping the land, and afford a great improvement in fertilizing the land. The entries on sheep were very numerous.

Grades, Leicesters and Southdowns. There is a great improvement in sheep, especially for the past few years. The Judges went busily to work, to determine which should get the prize. The number of entries on swine was not more than usual, but there were very good samples of Suffolk and Yorkshire and a great many pigs. The cereal crops were in general of good quality, and a great many entries. Wheat, barley, peas and Norway oats were first-rate samples. Roots and other hoed crops were not near as good as usual, owing to the great drought of summer. There were a great many entries of potatoes, mostly new varieties and of large growth, taking the season into account. The domestic manufacture was very extensive and of first quality. The dairy produce was in abundance and of good quality, The mechanical department was extensive and in great variety, and of great improvement when compared with former exhibitions. Carriages and farming implements of every kind. Reapers and mowers, and wood-cutting saws by horse-power. Ploughs and drags of great improvement, and appearing very suitable to perform their different works with durability. The fancy wearables made by the ladies were in great variety and a great success. The show of fruit, especially apples, was very extensive and of great variety, large and of excellent flavour. It was the best exhibition, held in North Hastings heretofore, with the exception of the class roots being inferior to other years' produce. There is no flax cultivated in this part of the country, there being no mills for the manufacture of such articles.

Dungannon and Faraday.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		26 24	
" 5 Members' Subscriptions		61 00	
" Admissions to Show		3 00	
" Legislative Grant		90 00	
" Proceeds, Sale of Seeds		37 51	
			217 75
Cr.			
By Prizes for Live Stock	61 50		
" " Field Products	45 00		
" " Dairy "	5 62		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	16 10		
" " Growing Crops	21 00		
		153 22	
" Purchase of Seed		34 84	
" Agricultural Publications		4 50	
" Working Expenses		33 12	
			225 68
Balance due Treasurer			7 93

Note.—This remote Society has been struggling against difficulties, but is still making some progress. Its exhibition, both in quantity and quality, fully answered expectations.

Huntingdon.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		174 75	
" Members' Subscriptions		56 00	
" Legislative Grant		84 00	
			314 75
Cr.			
By Prizes for Live Stock	94 75		
" " Field Products	46 35		
" " Dairy "	8 75		
" " Horticultural Products	12 40		
" " Agricultural Implements	46 85		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Arts and Manufactures	53 90		
		263 00	
" Agricultural Publications		32 50	
" Working Expenses		21 00	
			316 50
Balance due Treasurer			1 75

Madoc.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		40 64	
" 42 Members' Subscriptions		42 00	
" Legislative Grant		100 00	
			182 64
Cr.			
By Prizes for Live Stock	66 75		
" " Field Products	18 50		
" " Dairy "	9 50		
" " Horticultural Products	6 90		
" " Agricultural Implements	12 50		
" " Arts and Manufactures	20 75		
		134 90	
" Prize of last year		0 75	
" Preparing Show Grounds		1 00	
" Working Expenses		50 73	
			190 38
Balance due Treasurer			7 74

Rawdon.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		24 35	
" 60 Members' Subscriptions		60 00	
" Legislative Grant		91 00	
			175 35
Cr.			
By Prizes for Live Stock	72 25		
" " Field Products	27 35		
" " Dairy "	5 50		
" " Horticultural Products	8 20		
" " Agricultural Implements	32 65		
		145 95	
" Working Expenses		23 35	
			169 30
Balance in hand			6 05

HASTINGS, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		108 48	
" 148 Members' Subscriptions		150 00	
" Admissions to Show		28 77	

	$ cts.	$ cts.	$ cts.
Dr.			
" Legislative Grant		700 00	
" Miscellaneous Receipts		3 70	
			990 95
Cr.			
By Prizes for Live Stock	220 75		
" " Field Products	74 12		
" " Dairy "	9 00		
" " Horticultural Products	6 75		
" " Agricultural Implements	64 25		
" " Arts and Manufactures	75 85		
	450 72		
Unpaid	69 35		
		381 37	
" Prizes of previous year		90 15	
" Legislative Grant to Township Societies		280 00	
" Preparing Show Grounds		10 85	
" Agricultural Publications		85 00	
" Working Expenses		70 77	
			918 14
Balance in hand			72 81

REPORT.

It is with more than ordinary satisfaction, your President and Directors of the past year meet you at this annual meeting. The measure of prosperity and success attending the Association, the harmonious manner in which the labours of the past year have been conducted, and the pleasing result they now are able to present, renders the occasion one of pleasure and congratulation.

Though none of the Township Societies considered it to their interest to unite with the County Society during the past year, yet the hearty support accorded by the public generally, and the economy practised in the general management, enabled the Board to meet all ordinary expenses and liabilities, while the proceeds from the visitors entering the Hall were in excess of the previous year.

All this is very satisfactory, and evidences the growing interest of the public generally, as well as the farming community, in the efficiency and success of the Association.

Our Exhibition, held at Roslin on the sixth day of October, and the success attending it, we consider unmistakeable evidence of progress, as many of the articles, both of produce and manufacture, were superior in their kind, and we believe might have competed successfully at the Provincial Exhibition.

We congratulate you on the almost total disappearance of the midge during the past year, and if it should prove that their days are numbered, and the farmer be enabled to return to the raising of winter wheat, it will be a great advantage.

In comparing the present state of agriculture in this County with what it was a few years since, we can see that there is a constant improvement taking place, and in no department is this more conspicuous than in the large number of labour-saving machines and implements that have been constructed for the use of the farm, thus rendering the harvest work on the farm expeditious and easy compared with the slow and laborious methods of former days; and we think the manufacturers established in our midst certainly deserve our cordial thanks for their unceasing and successful efforts to improve all kinds of mechanical appliances to facilitate the operations of the farm.

In horses there was a very creditable competition in every class. In cattle the competition was also good, and most of the animals were of superior quality, showing progress in this department. The competition in swine over previous years was quite marked in the several classes.

The grain, seeds, roots and implements of manufacture were all well represented, and exceeded any previous exhibition in this the East Riding.

Thurlow.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		41 82	
" 51 Members' Subscriptions		52 00	
" Legislative Grant		140 00	
" Municipal Grant		15 00	
" Miscellaneous Receipts		8 20	
			257 02
Cr.			
By Prizes for Live Stock	79 50		
" " Field Products	22 00		
" " Dairy "	27 00		
" " Horticultural Products	3 00		
" " Agricultural Implements	16 75		
" " Arts and Manufactures	34 00		
	182 25		
Unpaid	16 50		
		165 75	
" Prizes of last year		20 25	
" Working Expenses		25 08	
			211 08
Balance in hand			45 4

Note.—The Society is described as being in a prosperous condition, but the exhibition on account of bad weather and the severe drought, was not equal to former occasions.

Tyendinaga.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		21 21	
" 71 Members' Subscriptions		71 00	
" Legislative Grant		140 00	
			232 21
Cr.			
By Prizes for Live Stock	87 50		
" " Field Products	36 50		
" " Dairy "	6 75		
" " Horticultural Products	3 00		
" " Agricultural Implements	24 25		
" " Arts and Manufactures	19 72		
		177 72	
" Preparing Show Grounds		15 73	
" Working Expenses		15 30	
			208 75
Balance in hand			23 46

REPORT.

The past year has not been so favourable to farmers as it would have been had there been more rain during summer, and especially in the fall. Still, there is small cause for grumbling, when we remember that some of our crops (fall wheat, for instance), have been better than usual. Spring wheat has been light in general, and late-sown has been severely injured by midge. Barley, peas, and oats, very fair, though oats were somewhat light in the grain, and straw of all kinds short. Hay, short and thin, but well saved, as were all crops. Indian corn, and roots of all kinds, were poorer than we have seen for some years. Pastures,

except on low land, were completely burned up by the excessive drought of summer and autumn. Fruit also below average.

The past season has not been favourable to cheese factories, which are now taking so prominent a place in Canadian agriculture, and which, we think, are a move in the right direction. Not the least important advantage of the system is, that farmers are induced to seed more land to pasture, and consequently to cultivate more thoroughly the land allotted to grain, &c.

We think more attention should be paid to sowing seed for pasture grass. Clover and Timothy seed are about the only kinds sown; these are excellent for hay, but not sufficient for pasture. We would recommend procuring a mixture of seeds more especially adapted for pasture, such as orchard grass, Kentucky blue grass, white clover, and other kinds, suited to the climate, and sowing along with clover and Timothy seed.

We would also urge upon farmers the necessity of paying more attention to a proper selection of seed grain, spring wheat in particular. We think it advisable to "change" seed at least every four or five years, procuring seed raised from a kind of soil different from that on which it is intended to be sown.

Planting a consderable breadth of what are generally called "hoed crops," uch as Indian corn, potatoes, turnips, carrots, mangels, &c., is necessary to good farming.

Draining and manuring are now allowed to be indispensable to successful farming; but neither is practised to so great an extent as should be.

We would also call attention to the rapid destruction of the woods. If this continue for a few years longer, at the same rate, a good piece of timber will be a rare sight outside of a museum. Scientific men argue that our frequent and long-continued spells of dry weather are mainly owing to the disappearance of the forests. To remedy this, let farmers and others plant trees along the road sides, around fields, &c., and never cut down a tree so long as they can find fallen timber suitable.

We advise every farmer to take and read an agricultural paper, not that everything published in them is either new or true, but we think much useful information may be got from them.

We also insist on farmers giving their children a good education, and thus remove a prevailing impression that farmers are ignorant and unrefined.

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HASTINGS, WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		424 41	
" Members' Subscriptions		249 00	
" Admissions to Show		234 28	
" Legislative Grant		700 00	
			1607 69
Cr.			
By Prizes for Live Stock	256 25		
" " Field Products	67 25		
" " Dairy "	37 50		
" " Horticultural Products	10 00		
" " Agricultural Implements	108 07		
" " Arts and Manufactures	128 75		
	607 82		
Unpaid	21 67		
		586 15	
" Prizes of previous year		210 55	
" Agricultural Publications		114 00	
By Working Expenses		266 26	
			1176 96
Balance			430 73

REPORT.

The Officers and Directors of the West Hastings Agricultural Society beg leave to report—

That it gives them great pleasure to state that the financial position of the Society is in a good condition, but they regret that farmers do not take that interest in agriculture they should; but feel thankful that there are some enterprising farmers in the West Hastings Society. The want of agricultural grounds and buildings are much felt, and trust that there may be steps taken to procure the same, as it will be a good help to forward the interest of said Society, and save a heavy expense yearly on said Society for rent. They also report an improvement in some cattle, sheep and swine, by the importation of improved breeds by a few farmers—an enterprise which they trust will be emulated by others. In horses we have some very fine animals, both for farming purposes and for the road, having this year been able to bring a number of prizes from the Provincial Show held in the City of Kingston, which speaks well for our horses in this Riding. The attention paid to the manufacture of agricultural implements during the past year has been a great success, thereby enabling us to draw a large number of prizes in this County, from the different matches in almost all parts of the Dominion. A decided improvement is yearly taking place in domestic manufactures, and in fine arts, &c.

HURON, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		70 97	
" 198 Members' Subscriptions		201 00	
" Legislative Grant		700 00	
" Hullet Society for Show		58 91	
" Canada Company Donation		30 00	
" Special Prizes		32 00	
" Miscellaneous Receipts		16 25	
			1109 13
Cr.			
By Prizes for Live Stock	382 50		
" " Field Products	92 00		
" " Dairy "	22 75		
" " Horticultural Products	33 25		
" " Agricultural Implements	33 00		
" " Arts and Manufactures	58 00		
	621 50		
Unpaid	137 50		
		484 00	
" Prizes of previous year		40 50	
" Legislative Grant to Township Societies		420 00	
" Mowing and Reaping Match		20 00	
" Working Expenses		184 93	
			1149 43
Balance due Treasurer			40 30

Ashfield & Wawanosh.

Dr	$ cts.	$ cts.	$ cts.
To Balance in hand		79 39	
" 100 Members' Subscriptions		101 00	
" Admissions to Show		47 50	
" Legislative Grant		47 30	
" Miscellaneous Receipts		1 25	
			276 44

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	102 75		
" " Field Products	29 00		
" " Dairy "	11 25		
" " Horticultural Products	16 25		
" " Agricultural Implements	12 25		
" " Arts and Manufactures	38 75		
		210 25	
" Prize of last year		0 25	
" Preparing Show Grounds		16 62	
" Working Expenses		22 70	
			249 82
Balance in hand			26 26

Colborne.

Dr.	$ cts.	$ cts.	$ cts.
To 150 Members' Subscription		172 00	
" Admissions to Show		29 00	
" Legislative Grant		65 27	
" Donations		18 00	
			284 27
Cr.			
By Prizes for Live Stock	79 25		
" " Field Products	28 50		
" " Dairy "	11 50		
" " Horticultural Products	14 50		
" " Agricultural Implements	20 75		
" " Arts and Manufactures	44 50		
		199 00	
" Extra Prizes		32 33	
" Preparing Show Grounds		13 30	
" Working Expenses		13 63	
			258 26
Balance in hand			26 01

Grey.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		52 87	
" 112 Members' Subscriptions		119 00	
" Admissions to Show		37 00	
" Legislative Grant		53 45	
" Miscellaneous Receipts		12 15	
			274 47
Cr.			
By Prizes for Live Stock	81 75		
" " Field Products	18 75		
" " Dairy "	6 50		
" " Horticultural Products	3 00		
" " Agricultural Implements	18 75		
" " Arts and Manufactures	29 75		
" Ploughing Match	35 00		
	193 50		
Unpaid	20 90		
		172 60	
" Preparing Show Grounds		10 80	

	$ cts.	$ cts.
By Prizes Previous Year	4 50	
" " Working Expenses	45 20	
		233 10
Balance in hand		41 37

Turnberry.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		10 62	
" 179 Members' Subscriptions		202 70	
" Admissions to Show		15 70	
" Legislative Grant		74 26	
" Proceeds Sale of Seeds		13 15	
			316 43
Cr.			
By Prizes for Live Stock	101 25		
" " Field Products	45 25		
" " Dairy "	12 75		
" " Horticultural Products	6 75		
" " Agricultural Implements	19 75		
" " Arts and Manufactures	16 25		
	202 00		
Unpaid	6 75		
		195 25	
" Preparing Show Grounds		11 00	
" Purchase of Seed		12 45	
" " Working Expenses		17 60	
			236 30
Balance on hand			80 13

HURON, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		47 12	
" 76 Members' Subscriptions		76 00	
" Legislative Grant		700 00	
" Grant from Tuckersmith Society		330 00	
" Donations		128 00	
" Miscellaneous Receipts		14 50	
			1295 62
Cr.			
By Prizes for Live Stock	375 75		
" " Field Products	79 50		
" " Dairy "	35 50		
" " Horticultural Products	35 75		
" " Agricultural Implements	33 00		
" " Arts and Manufactures	91 75		
		651 25	
" Legislative Grant to Township Societies		420 00	
" Working Expenses		181 88	
			1253 13
Balance in hand			42 49

Hay.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		71 07	
" 118 Members' Subscriptions		151 75	
" Admissions to Show		31 85	
" Legislative Grant		64 79	
" Proceeds Sale of Seeds		2 32	
			321 78
Cr.			
By Prizes for Live Stock	100 00		
" " Field Products	30 50		
" " Dairy "	7 00		
" " Horticultural Products	15 00		
" " Agricultural Implements	16 00		
" " Arts and Manufactures	28 40		
	196 90		
Unpaid	46 00		
		150 90	
" Prizes for Previous Year		20 00	
" Working Expenses		32 65	
			203 55
Balance in hand			118 23

Stanley.

Dr.	$ cts.	$ cts.	$ cts.
To Balance on hand		48 68	
" Members' Subscriptions		138 50	
" Admissions to Show		24 79	
" Legislative Grant		57 81	
" Interest		5 00	
			274 78
Cr.			
By Prizes for Live Stock	81 50		
" " Field Products	25 50		
" " Dairy "	8 00		
" " Horticultural Products	8 75		
" " Agricultural Implements	13 50		
" " Arts and Manufactures	28 00		
		165 25	
" Prize of Last Year		2 00	
" Working Expenses		50 52	
			217 77
Balance in hand			57 01

Stern & Osborne.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		68 16	
" Members' Subscriptions		185 00	
" Admissions to Show		170 46	
" Legislative Grant		102 00	
			525 62
Cr.			
By Prizes for Live Stock	203 00		
" " Field Products	13 50		
" " Dairy "	9 50		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Horticultural Products	34 25		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	39 00		
" " Growing Crops	15 00		
	324 25		
Unpaid	158 72		
		165 53	
" Working Expenses		68 73	
			234 26
Balance in hand			291 36

Tuckersmith.

Dr.	$ cts.	$ cts.	$ cts.
To 309 Members' Subscriptions		309 00	
" Admissions to Show		327 20	
" Legislative Grant		134 81	
" Proceeds for Pasture and Booths		143 15	
			914 16
Cr.			
By Balance due Treasurer		53 45	
" Amount of Prizes		403 50	
" Preparing Show Grounds		125 00	
" Purchase of Exhibition Buildings, &c		144 13	
" Working Expenses		246 03	
			972 11
Balance due Treasurer			57 95

Goderich Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		62 36	
" Members' Subscriptions		118 25	
" Admissions to Show		63 34	
" Legislative Grant		60 50	
" Miscellaneous Receipts		3 50	
			307 95
Cr.			
By Prizes for Flowers	30 00		
" " Fruits	55 75		
" " Vegetables	33 25		
" " Ladies' Work, &c	25 50		
		144 50	
" Potatoes and Bulbs to Members		21 21	
" Preparing Show Rooms		35 00	
" Horticultural Publications		25 20	
" Working Expenses		56 20	
			282 11
Balance in hand			25 84

REPORT.

The Directors of the Goderich Horticultural Society, in presenting their third annual Report, beg to congratulate the members upon the increasing prosperity of the Society during the past year.

The Society has been at considerable expense last year, in repairing and fitting up the Drill Shed for the Exhibition, and in procuring additional works upon Horticulture for the use of its members. The Society also purchased a quantity of flower bulbs, and two new varieties of potatoes (Breeze's Peerless and King of Earlies) for distribution amongst the members. Both varieties succeeded remarkably well, notwithstanding the dry season. The Peerless promises to be an excellent winter variety, they grow to a large size, are very productive, sound and dry.

The Society's Exhibition last year was a complete success. No doubt it was considerably enhanced by the Fruit-growers' Association holding their exhibition jointly with us, thus allowing those parties, who were members of both the Society and Association to compete for the prizes offered by both Societies.

The members of the Goderich Society carried away a goodly number of the prizes offered by the Association, whilst competing against the most prominent and professional fruit-growers of Ontario, which shows that Horticulture receives considerable attention from our members, and that our climate and soil are equal to any in the Province for Horticultural purposes.

KENT.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		120 54	
" Members' Subscriptions		332 50	
" Admissions to Show		492 43	
" Legislative Grant		700 00	
" Municipal Grant		275 00	
" Proceeds Sale of Seeds		460 32	
" Miscellaneous Receipts		95 20	
			2475 99
Cr.			
By Prizes for Live Stock	486 00		
" Field Products	62 00		
" Dairy "	36 00		
" Horticultural Products	29 00		
" Agricultural Implements	129 00		
" Arts and Manufactures	163 00		
	905 00		
Unpaid	152 00		
		753 00	
" Prizes of last year		3 12	
" Legislative Grant to Township Societies		404 72	
" Preparing Show Grounds		285 20	
" Purchase of Seed		452 68	
" Working Expenses		309 45	
			2208 17
Balance in hand			267 82

REPORT.

The Directors meet the members with much pleasure upon the present occasion, inasmuch as they are enabled to state that the Society is still progressing, the past year having been the most prosperous that it ever enjoyed.

The Fair was a great success, a larger amount was taken as entrance fees than upon any former occasion. This was partly owing to your Directors having adopted the plan of charging all parties except members for entrance to the ground. It is true that many seemed to think this a hardship, but when the public become aware that it is only by creating new sources of revenue, that the Society can be carried on in a vigorous manner, your Directors trust that in future they will cheerfully pay this trifling charge. It is very clear that if the

Society is left to be carried on by the money arising from the payment of annual subscriptions that it will break down : as the accounts of the treasurer will show that these form a very small portion of the income of the Society.

The show was capital, the cattle surpassed anything ever exhibited here, showing that the farmers are turning their attention to better breeds. The sheep and pigs were excellent —horses were good, showing improvement, particularly in draught horses. The exhibition of implements was the most extensive ever made in this County.

As will be seen by the papers a large amount of money is being spent annually, under the Drainage Act in the different Municipalities, with a view of draining the low lands of the County. The improvement caused by this outlay, in the course of a short time, will be immense, and if the want of labour to cultivate those reclaimed lands could be supplied, the farmer would then be relieved from a pressing necessity.

Your Directors, seeing that the present system of immigration is a failure, as far as supplying this district is concerned, would suggest that if the Municipalities requiring labour would supply funds to a certain extent, this might be remedied. It might, perhaps, be brought about as follows :—Any Municipality could authorize some of the Government Emigrant Agents in the old Country, to aid proper parties to emigrate, upon their undertaking to refund the expense incurred. These individuals should be forwarded to the township furnishing the funds, to which any farmer wanting help might apply ; and upon his paying the sum advanced as passage money a labourer could be assigned, and he could arrange to stop the sum advanced out of the wages.

A car load of spring wheat and peas was brought in the spring which was sold without loss.

Chatham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		94 37	
" 100 Members' subscriptions		123 00	
" Legislative Grant		108 37	
			325 74
Cr.			
By Prizes for Live Stock	86 50		
" " Field Products	22 80		
" " Dairy "	12 30		
" " Horticultural Products	8 60		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	26 60		
		160 80	
" " Preparing Show Grounds		8 00	
" " Agricultural Publications		39 00	
" " Working Expenses		58 14	
			265 94
Balance in hand			59 80

Harwich.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		18 59	
" 145 Members' Subscriptions		150 25	
" Legislative Grant		140 00	
" Proceeds Sale of Seeds and Live Stock		919 99	
			1228 83
Cr.			
By Prizes for Live Stock	98 50		
" " Field Products	31 00		
" " Dairy "	11 00		
" " Horticultural Products	15 00		
" " Agricultural Implements	16 00		

	$ cts.	$ cts.	$ cts.
By Prizes for Arts and Manufactures	17 75		
	190 25		
Unpaid	11 25		
		179 00	
" Prizes of previous year		32 75	
" Preparing Show Grounds		4 62	
" Purchase of Seed		804 10	
" Working Expenses		66 88	
			1087 35
Balance in hand			141 48

NOTE.—The purchase of seed grain from a distance, and the importation of pure bred stock, are beginning to improve materially the agriculture of the Township. Crops generally abundant. The potato beetle made its appearance for the first time. Millers' antidote was applied by one member and found to be efficient.

Raleigh.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		13 31	
" 87 Members' Subscriptions		88 00	
" Legislative Grant		93 81	
" Proceeds Sale of Seeds		467 04	
" Cash Borrowed and Received from Notes		673 84	
			1,336 00
CR.			
By Prizes for Live Stock	107 50		
" " Field Products	31 10		
" " Dairy "	7 25		
" " Horticultural Products	5 30		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	13 05		
		166 20	
" Paid on Loans		603 00	
" Purchase of Seed		414 66	
" Working Expenses		34 26	
			1,218 12
Balance in hand			117 88

REPORT.

The extreme dry weather has been a great drawback to farmers, many having to drive their stock from three to eight miles to water; and this is not the only evil—the ground has been so dry and hard, that very little fall ploughing has been done.

* * * * *

Farmers have done well the last year. Crops have been good, and prices fair. Few are asking for loans; but, on the other hand, many have large sums to let out.

Land in this Township is rising in value very fast—we think at least fifty per cent in the last two years. This may be partly accounted for from the prospect of the Canada Southern R. R., which is now being constructed through the Township. We expect, in a year from this, to see the "iron horse" drawing fifty cars along this magnificent line of road, it is said, more easily than twenty-five can be drawn on any other line in the Province.

The Township, though very flat and level, is now nearly all drained. The Township Council is still pushing forward this noble enterprise, some ten thousand dollars being spent during the last year. We are sorry to say that the drain in progress by the late Government

goes on very slowly, and the manner in which the dirt is deposited on the road will cost a large sum of money to make it travellable.

New comers are rapidly moving into the Township, many of whom come from the extreme east, so that nearly all the wild land is now being bought up.

We are glad that many are ceasing to listen to the old story of fever and ague, frogs, and mosquitoes, and are coming to see for themselves the fine rich durable soil we have in this part of the Province.

That obnoxious weed, known as the Canada thistle, is steadily creeping in and spreading. We strongly urge upon the authorities of the Township to put the law in this respect rigidly in force, or we shall soon have our fields covered with this great enemy to the agriculturist.

Farmers are steadily improving their stock, and making better provisions for them, which, we think, is of great importance, as we feel deeply impressed that, whatever the breed may be, if not properly fed and cared for, in a short time it will deteriorate, and become anything but a credit to the owner.

The fall show was, as usual, attended only by a few exhibitors in comparison to what we should have; yet we think it was an improvement on the year before. The number of entries exceeded that of last year by 50, and the show of stock greatly improved in quantity and quality. The ladies did their part well.

The grain and seeds purchased by the President, we think, gave general satisfaction, and netted a profit of about $20, over and above all expenses.

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Tilbury East.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		10 00	
" Members' Subscriptions		58 00	
" Legislative Grant		56 00	
" Proceeds Sale of Live Stock		104 00	
			228 00
Cr.			
By Prizes for Live Stock	47 43		
" " Field Products	12 22		
" " Horticultural Products	1 36		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	3 96		
		66 97	
" " Working Expenses		11 75	
			78 72
Balance in hand			149 28

Note.—There are signs of improvement in the agriculture of this Township: wet, clay lands are beginning to be drained. The drainage of 12,000 acres of low swampy land, now proceeding by the Board of Works, will greatly increase the productive powers of the soil, and improve the climate.

KINGSTON, ELECTORAL DIVISION.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		431 00	
" Members' Subscriptions		164 00	
" Admissions to Show		30 55	
" Legislative Grant		350 00	
			975 55
Cr.			
By Prizes for Live Stock	19 50		
" " Horticultural Products	121 00		

	$ cts.	$ cts.	$ cts.
By Prizes for Arts and Manufactures	57 25		
		197 75	
" Working Expenses		155 60	
			353 35
Balance in hand			622 20

REPORT.

In consequence of the Provincial Exhibition being held at Kingston, in September, the Directors considered it advisable to hold but one show during the past year, dispensing with the usual autumn show, in order that the members might devote their interests in promoting the great objects of the Provincial Exhibition.

The skating rink in which the Electoral Division Society's Exhibitions have hitherto been held having been sold, and now occupied as mechanical workshops, the Directors were under the necessity of obtaining permission from the military authorities to hold the Exhibition in the Drill Shed, which took place on the sixth day of July. The articles exhibited in the various classes were fairly represented. The vegetables and small fruits were remarkably fine.

* * * * *

It may not be out of place here to mention, that during the past summer two kinds of insects made their appearance which have not before been destructive in this locality, the one attacking and greatly injuring the cabbage crops; the other appearing on the potato vines. As little or no means have been taken to stay their ravages, it is not unlikely but that during the coming summer they may become more numerous. Cultivators would be greatly benefited by taking active means for destroying as far as possible the many insects which have become great obstacles to the success of growing vegetables and fruits, and which apparently are yearly becoming more numerous. It is not the intention here to give the names, or describe the period and mode of the insects attacking the various fruits and vegetables, but merely to suggest trying such experiments as may seem best calculated for the complete destruction of all injurious insects, and when success be obtained, to make public the result and mode of treatment that others may benefit thereby.

If persons who possess gardens and orchards would take the trouble, during the summer months, of hanging to the branches of their fruit trees wide-necked bottles half-filled with sweetened water, very many thousands of destructive insects would be caught therein, which would tend greatly to check their yearly increase.

LAMBTON.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		123 95	
" 191 Members' Subscriptions		285 40	
" Admissions to Show		66 00	
" Legislative Grant		700 00	
" Municipal Grant		160 00	
" Proceeds Sale of Stock		40 00	
			1375 35
Cr.			
By Prizes for Live Stock	234 24		
" " Field Products	75 00		
" " Dairy "	33 50		
" " Horticultural Products	31 85		
" " Agricultural Implements	31 00		
" " Arts and Manufactures	57 01		
	462 60		

	$ cts.	$ cts.	$ cts.
Unpaid	13 13		
		449 47	
By Prizes of last year		14 25	
" L. G. to Township Societies		413 25	
" Preparing Show Grounds		19 36	
" County Grant to Dawn and Euphemia		26 66	
" Agricultural Publications		43 50	
" Working Expenses		137 72	
			1104 21
Balance in hand			271 14

Bozanquet.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		31 16	
" 95 Members' Subscriptions		186 00	
" Legislative Grant		97 75	
" Proceeds Sale of Stock		70 00	
			384 91
Cr.			
To Purchase of Live Stock		348 64	
" Working Expenses		20 71	
			369 35
Balance in hand			15 56

Brooke.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		108 61	
" 123 Members' Subscriptions		164 25	
" Legislative Grant		88 75	
" Proceeds Sale of Stock		58 87	
			420 48
Cr.			
By Purchase of Live Stock		191 13	
" Working Expenses		35 71	
			226 84
Balance in hand			193 64

Enniskillen.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		168 30	
" 87 Members' Subscriptions		117 00	
" Legislative Grant		50 25	
" Municipal Grants		150 00	
" Proceeds Sale of Live Stock		73 00	
" Miscellaneous Receipts		5 00	
			563 75
Cr.			
By Prizes for Live Stock	92 20		
" " Field Products	21 85		
" " Dairy "	14 20		
" " Horticultural Products	11 90		
" " Agricultural Implements	8 50		
" " Arts and Manufactures	13 10		
	161 25		

	$ cts.	$ cts.	$ cts.
Unpaid	39 30		
		121 95	
By Prizes of last year		16 06	
" Preparing Show Grounds		12 50	
" Purchase of Live Stock		97 10	
" Working Expenses		72 71	
			320 32
Balance in hand			243 43

Moore.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		60 02	
" 137 Members' Subscriptions		160 00	
" Admissions to Show		10 37	
" Legislative Grant		80 00	
" Miscellaneous Receipts		9 98	
			220 37
Cr.			
By Prizes for Live Stock	84 27		
" " Field Products	24 02		
" " Dairy "	14 20		
" " Horticultural Products	3 30		
" " Agricultural Implements	16 25		
" " Arts and Manufactures	8 05		
		150 09	
" Preparing Show Grounds		5 00	
" Agricultural Publications		25 42	
" Working Expenses		98 30	
			278 81
Balance in hand			41 56

Plympton.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		36 45	
" 107 Members' Subscriptions		107 00	
" Legislative Grant		55 25	
" Municipal Grant		100 00	
" Miscellaneous Receipts		3 00	
			301 70
Cr.			
By Prizes for Live Stock	83 50		
" " Field Products	24 50		
" " Dairy "	4 25		
" " Horticultural Products	4 50		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	10 74		
	131 49		
Unpaid	3 75		
		127 74	
" Preparing Show Grounds		100 00	
" Working Expenses		24 51	
			252 25
Balance in hand			49 75

Warwick.

Dr.	$ cts.	$ cts.	$ cts.
To Balance to hand		40 20	
" 81 Members' Subscriptions		82 00	
" Admissions to Show		17 00	
" Legislative Grant		41 75	
			180 95
Cr.			
By Prizes for Live Stock	37 25		
" " Field Products	19 05		
" " Dairy "	5 00		
" " Horticultural Products	1 45		
" " Arts and Manufactures	13 80		
		76 55	
" Prize of last year		2 00	
" Purchase of Stock		18 00	
" Working Expenses		32 65	
			129 20
Balance in hand			51 75

LANARK, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		111 49	
" Members' Subscriptions		377 15	
" Admissions to Show		135 09	
" Legislative Grant		700 00	
" Township Funds		71 00	
" Ramsay Society		50 00	
" Miscellaneous Receipts		45 80	
			1490 53
Cr.			
By Prizes for Live Stock	122 61		
" " Field Products	32 53		
" " Dairy "	41 10		
" " Agricultural Implements	18 60		
" " Arts and Manufactures	44 20		
	259 04		
Unpaid	59 69		
		199 35	
" Premiums of Last Year		57 64	
" Legislative Grant to Township Societies		397 00	
" Preparing Show Grounds		126 68	
" Working Expenses		163 86	
			944 53
Balance in hand			546 00

Ramsay.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 55	
" 57 Members' Subscriptions		70 50	
" Legislative Grant		71 00	
			143 05

Cr.	$ cts.	$ cts.	$ cts.
By Paid to County Society		128 00	
" Working Expenses		13 00	
			141 00
Balance in hand			2 05

Note.—This Society united with that of the County for all purposes.

LANARK, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To 197 Members' Subscriptions		199 00	
" Admissions to Show		146 15	
" Legislative Grant		700 00	
" Donations		30 00	
" Proceeds Sale of Stock and Seeds		220 60	
" Proceeds of note		106 00	
" Miscellaneous Receipts		12 00	
			1413 75
Cr.			
By Balance due Treasurer		63 18	
" Prizes for Live Stock	145 00		
" " Field Products	61 10		
" " Dairy "	49 75		
" " Horticultural Products	12 25		
" " Agricultural Implements	47 50		
" " Arts and Manufactures	77 75		
	393 35		
Unpaid	16 75		
		376 60	
" Legislative Grant to Township Societies		418 38	
" Preparing Show Grounds		38 25	
" Purchase of Stock and Seed		300 43	
" Agricultural Publications		12 00	
" For service of Stallion		30 00	
" Working Expenses		117 92	
			1356 76
Balance in hand			56 99

Note.—The Exhibition was very successful. The purchase of seed wheat from a distance last year appears to have answered general expectations. The Society now owns no animals, and the Directors recommend the giving of liberal bonuses to private individuals for the importation of pure bred stock.

Bathurst.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		5 56	
" 56 Members' Subscriptions		100 00	
" Legislative Grant		92 50	
" Proceeds Sale of Stock		38 00	
			236 06
Cr.			
By Purchase of Stock		222 56	

	$ cts.	$ cts.	$ cts.
By Working Expenses		11 00	
			233 56
" Balance in hand			2 50

Beckwith.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		122 50	
" Legislative Grant		103 13	
			225 63
Cr.			
By Balance due Treasurer		20 47	
" Amount of Premiums		165 75	
" Agricultural Publications		30 00	
" Working Expenses		3 89	
			220 11
" Balance in hand			5 52

Drummond.

Dr.	$ cts.	$ cts	$ cts.
To 136 Members' Subscriptions		145 00	
" Legislative Grant		120 25	
" Proceeds Sale of Stock		37 00	
			302 25
Cr.			
By Purchase of Live Stock		270 00	
" Working Expenses		31 48	
			301 48
" Balance in hand			00 77

Montague.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		35 16	
" 100 Members' Subscriptions		126 50	
" Admissions to Show		4 40	
" Legislative Grant		102 50	
" Proceeds Sale of Seeds		22 34	
			290 90
Cr.			
By Prizes for Live Stock	72 25		
" " Field Products	36 75		
" " Dairy "	26 20		
" " Horticultural Products	2 80		
" " Arts and Manufactures	17 20		
		155 20	
" Preparing Show Grounds		6 60	
" Purchase of Stock		65 00	
" Agricultural Publications		18 45	
" " Working Expenses		20 97	
			266 22
Balance in hand			24 68

LEEDS (NORTH) AND GRENVILLE.

Dr.	$ cts.	$ cts.	$ cts.
To balance in hand		209 73	
" Members' Subscriptions		61 40	
" Admissions to Show		217 28	
" Legislative Grant		700 00	
" Miscellaneous Receipts		75 00	
			1263 41
Cr.			
By Prizes for Live Stock	241 95		
" " Field Products	42 95		
" " Dairy "	9 85		
" " Horticultural Products	24 25		
" " Agricultural Implements	72 55		
" " Arts and Manufactures	52 79		
" " Growing Crops	40 00		
	484 34		
Unpaid	198 08		
		286 26	
" Prizes for previous year		16 86	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Ground		70 46	
" Agricultural Publications		10 50	
" Working Expenses		247 36	
			1051 44
Balance in hand			211 97

Gower, South.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		81 00	
" Legislative Grant		98 00	
			179 00
Cr.			
By Prizes for Live Stock	69 75		
" " Field Products	25 10		
" " Dairy "	6 00		
" " Horticultural Products	2 40		
" " Arts and Manufactures	23 00		
	126 25		
Unpaid	40 70		
		85 55	
" Preparing Show Grounds		9 65	
" Working Expenses		8 25	
			103 45
Balance in hand			75 55

Kitley and Elmsley.

Cr.	$ cts.	$ cts.	$ cts.
To Balance in hand		81 96	
" Members' Subscriptions		85 92	
" Legislative Grant		98 00	
			265 88

Cr.	$ cts.	$ cts.
By Amount of Premiums	127 80	
" Paid County Society	58 00	
" Preparing Show Grounds	13 00	
" Purchase of Seeds	41 31	
" Working Expenses	13 61	
		253 72
Balance in hand		12 16

Walford.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 18	
" Members' Subscriptions		91 57	
" Legislative Grant		108 50	
" Proceeds Sale of Stock		8 00	
			209 25
Cr.			
By Premiums		144 55	
" Purchase of Stock		40 00	
" Working Expenses		24 70	
			209 25
Balance			0 00

LEEDS, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To 106 Members' Subscriptions		106 00	
" Legislative Grant		700 00	
" Proceeds Sale of Stock		33 00	
			839 00
Cr.			
By Balance due Treasurer		17 33	
" Prizes for Live Stock	118 25		
" " Field Products	23 75		
" " Dairy "	16 50		
" " Horticultural Products	8 00		
" " Agricultural Implements	36 25		
" " Arts and Manufactures	29 75		
		232 50	
" L. G. to Township Societies		419 50	
" Preparing Show Grounds		23 00	
" Working Expenses		27 00	
			719 33
" Balance in hand			119 67

REPORT.

The Directors would congratulate the members of the Society on again meeting, in the midst of peace and plenty, to close the business of the Society, and arrange for future operations.

The Ayrshire bull purchased by the Society has done good service among the members' cows, and it is hoped his superior qualities will be seen in the calves of the coming season.

Last summer was remarkable for heat and drought, and the crops were lighter than could have been wished. Still, there was plenty of grain and feed for our own locality, and

some to spare. A considerable quantity of barley was shipped in the fall, and the production of butter and cheese was unusually large. All these articles, however, brought low prices, and many of our farmers think of again turning their attention to wheat, which, if let alone by the "midge," would be a remunerative crop. Last year, the ravages of this destructive pest were comparatively trifling, and it is hoped that it is about to leave us for ever. Some farmers near Gananoque, who sowed "Fyfe" wheat last year, had a return of over twenty to one.

The potato crop last year was excellent. The varieties known as the "garnet chilis" and "early rose" are now largely cultivated, and have proved a great boon to the people. Turnips proved nearly a total failure. A good deal of corn was sown broadcast, and during the extreme drought furnished excellent green fodder for cattle.

The manufacturers of Gananoque are all busy, and are sharing largely in the general prosperity of the country.

The last exhibition of the Society was rather small, and did not excite the usual interest. It is hoped an effort will be made this year to increase the membership of the Society, and that the exhibition of 1872 will be large and successful.

Bastard and Crosby.

	$ cts.	$ cts.	$ cts.
To Balance in hand		9 86	
" 67 Members' Subscriptions		95 82	
" Legislative Grant		75 50	
			181 18
Cr.			
By Prizes for Live Stock	63 37		
" " Field Products	20 05		
" " Dairy	5 00		
" " Horticultural Products	7 85		
" " Agricultural Implements	3 33		
" " Arts and Manufactures	14 32		
" " Growing Crops	25 00		
		138 92	
" Working Expenses		27 00	
			165 92
Balance in hand			15 26

Crosby, North.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		226 00	
" Legislative Grant		169 50	
" Proceeds Sale of Stock		7 00	
			402 50
Cr.			
By Balance due Treasurer		4 60	
" Prizes for Live Stock	99 00		
" " Field Products	90 00		
" " Dairy "	13 00		
" " Horticultural Products	6 00		
" " Arts and Manufactures	27 00		
" " Growing Crops	60 00		
		295 00	
" Preparing Show Grounds		30 52	
" Working Expenses		30 66	
			360 78
Balance in hand			41 72

Lansdowne.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		33 82	
" 96 Members' Subscriptions		109 00	
" Legislative Grant		85 00	
" Proceeds Sale of Stock		19 25	
			247 07
Cr.			
By Prizes for Live Stock	41 00		
" " Field Products	10 50		
" " Dairy "	13 75		
" " Horticultural Products	11 21		
" " Agricultural Implements	9 25		
" " Arts and Manufactures	14 92		
	100 63		
" Preparing Show Grounds		1 50	
" Purchase of Stock		57 06	
" Agricultural Publications		3 00	
" Working Expenses		14 91	
			177 10
Balance in hand			69 97

REPORT.

The President and Directors of the Lansdowne Agricultural Society beg to lay before its members a report of the proceedings and condition of the Society for the past year, and hope that the suggestions contained therein may not be disadvantageous to its interests. Owing to the drought which prevailed during the past summer, the harvest was not so bountiful as might have been desired, and a depression in the market for dairy products operated to a certain extent against the prosperity of the Township. Yet in the aggregate a large amount of produce has been disposed of, and, instead of retrogressing, we believe the prosperity of the Township has advanced during the past year.

There has been a slight falling off in memberships and subscriptions as compared with last year's report, which is much to be regretted, as we consider the inducements held out by the Provincial Government in aid of Agricultural Societies, should stimulate every property holder to lend a helping hand to the development of our agricultural capabilities, upon which depend in a great measure the future prosperity of our country.

Our annual Exhibition was held on the twelfth day of October. The morning was rainy and disagreeable, and in consequence the show was not so good as it would have been had the weather been more propitious. The attendance of visitors was very large, but not so of the exhibitors. The show of live stock was fair, as was likewise the show of dairy products. In other departments it was very meagre, and very much below that of previous exhibitions.

* * * * *

We have purchased during the year one Berkshire and one Suffolk boar, which we trust will further improve our present very good specimens of swine.

* * * * *

Yonge and Escott.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		43 16	
" 62 Members' Subscriptions		76 03	
" Legislative Grant		89 50	
			208 69
Cr.			
By Prizes for Live Stock	44 25		
" " Field Products	10 60		

	$ cts.	$ cts.	$ cts.
By Prizes for Dairy Products	4 25		
" " Horticultural Products	2 10		
" " Agricultural Implements	7 30		
" " Arts and Manufactures	11 50		
" " Growing Crops	22 70		
	102 70		
Unpaid	51 35		
		51 35	
" Purchase of Stock		60 00	
" Working Expenses		45 99	
			157 34
Balance in hand			51 35

LENNOX.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		182 49	
" 284 Members' Subscriptions		296 00	
" Legislative Grant		700 00	
" R. I. Cartwright, Esq., M.P., donation		40 00	
" Special Prizes		22 00	
			1240 49
Cr.			
By Prizes for Live Stock	430 00		
" " Field Products	43 25		
" " Dairy "	29 75		
" " Horticultural Products	23 10		
" " Agricultural Implements	128 65		
" " Arts and Manufactures	112 37		
	767 12		
Unpaid	63 45		
		703 67	
" Prizes of last year		43 25	
" Legislative Grant to Township Societies		219 00	
" Working Expenses		111 62	
			1077 54
Balance in hand			162 95

Ernesttown and S. Fredericksburgh.

Dr.	$ cts.	$ cts.	$ cts.
To 99 Members' Subscriptions		99 00	
" Legislative Grant		99 00	
" Municipal Grant		10 00	
" Miscellaneous Receipts		7 00	
			215 00
Cr.			
By Prizes for Live Stock	126 00		
" " Field Products	14 75		
" " Dairy "	5 00		
" " Horticultural Products	1 25		
" " Agricultural Implements	13 75		

	$ cts.	$ cts.	$ cts.
By Prizes for Arts and Manufactures	15 25		
	176 00		
Unpaid	28 75		
		147 25	
" Working Expenses		39 00	
			186 25
Balance in hand			28 75

Fredericksburgh, North.

Dr.	$ cts.	$ cts.	$ cts.
To 81 Members' Subscriptions		81 00	
" Legislative Grant		53 00	
" Municipal Grant		12 42	
			146 42
Cr.			
By Balance due Treasurer		1 81	
" Prizes for Live Stock	64 50		
" " Field Products	16 25		
" " Dairy "	4 50		
" " Horticultural Products	2 25		
" " Arts and Manufactures	17 59		
		104 89	
" Preparing Show Grounds		6 00	
" Working Expenses		29 59	
			142 29
Balance in hand			4 13

LINCOLN.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		359 04	
" 110 Members' Subscriptions		134 75	
" Admissions to Show		219 30	
" Legislative Grant		700 00	
" Municipal Grant		250 00	
" Grantham Agricultural Society		487 50	
" St. Catharines' Horticultural Society		26 75	
" Miscellaneous Receipts		9 00	
			2186 34
Cr.			
By Prizes for Live Stock	691 25		
" " Field Products	95 00		
" " Dairy "	20 00		
" " Horticultural Products	141 75		
" " Agricultural Implements	13 50		
" " Arts and Manufactures	147 25		
	1108 75		
Unpaid	45 00		
		1063 75	
" " for previous year		59 25	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		86 40	

	$ cts.	$ cts.	$ cts.
By Grantham Society's Expenses		16 52	
" Working Expenses		269 70	
			1909 62
Balance in hand			276 72

Clinton.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		93 17	
" 124 Members' Subscriptions		138 00	
" Admissions to Show		21 85	
" Legislative Grant		95 00	
" Municipal Grant		50 00	
" J. C. Rykert, M.P.P., donation		10 00	
" Miscellaneous Receipts		28 45	
			436 47
Cr.			
By Prizes for Live Stock	174 30		
" " Field Products	29 65		
" " Dairy "	11 95		
" " Horticultural Products	28 90		
" " Agricultural Implements	10 25		
" " Arts and Manufactures	27 16		
		282 21	
" Working Expenses		61 57	
			343 78
Balance in hand			92 69

Grantham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		37 79	
" 243 Members' Subscriptions		245 50	
" Legislative Grant		167 00	
" Municipal Grant		75 00	
			525 29
Cr.			
By Paid County Society for Union Show		470 98	
" Working Expenses		16 52	
			487 50
Balance in hand			37 79

Grimsby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		26 12	
" 76 Members' Subscriptions		79 00	
" Admissions to Show		15 80	
" Legislative Grant		62 00	
" Municipal Grant		50 00	
			232 92
Cr.			
By Prizes for Live Stock	111 13		
" " Field Products	23 19		
" " Dairy "	4 38		
" " Horticultural Products	20 19		

	$ cts.	$ cts.	$ cts.
" " Agricultural Implements	9 38		
" " Arts and Manufactures	11 41		
		179 68	
" Preparing Show Grounds		18 28	
" Working Expenses		16 22	
			214 18
Balance in hand			18 74

Louth.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 67	
" 74 Members' Subscriptions		93 00	
" Admissions to Show		6 00	
" Legislative Grant		69 25	
" Municipal Grant		40 00	
" Miscellaneous Receipts		8 80	
			237 72
Cr.			
By Prizes for Live Stock	96 25		
" " Field Products	14 35		
" " Dairy "	4 50		
" " Horticultural Products	27 25		
" " Agricultural Implements	4 25		
" " Arts and Manufactures	25 24		
		171 84	
By Working Expenses		27 51	
			199 35
Balance in hand			38 37

REPORT.

The Officers and Directors of the Township of Louth Agricultural Society, in presenting this their Eighteenth Annual Report (as required by Statute), have a more flattering account to give, both in regard to the financial position of the Society, and the result of the exhibition, than they had for the previous year, and still there is much room for improvement.

We note with regret the want of interest displayed by the inhabitants of the Township generally in regard to keeping up our show; and were it not for a few, who are anxious to see the Society prosper, and actively exert themselves in soliciting subscriptions, we would have no show.

* * * * *

In horses, as usual in this Township, the display was very creditable; but the number shown was not equal to what we have seen at previous fairs, particularly in carriage and buggy horses. The show of cattle was not large, but some very good specimens of the Durham breed were exhibited by Messrs. Wyatt and Betts. There are but comparatively few thorough-bred cattle of any breed in the Township; but people are awakening to the vast importance of infusing pure blood into their stock as a means of making an improvement in their size and symmetry, and also of hastening their maturity, which are very important points in stock raising.

In sheep, the numbers were not as large as on some former exhibitions; but those shown by Messrs. Wyatt, Cooke, Crowe, and Thompson, were very fine specimens.

We noticed among the swine some specimens that were very good in their class, especially the Suffolks.

We note with regret the total absence of agricultural implements, which should occupy a prominent position at all agricultural exhibitions, as the majority who attend them are farmers, and they would be able to see the different kinds of implements for doing certain

kinds of work, and judge of their merits; but as there are no establishments in the Township for their manufacture, only on a small scale, we cannot look for a large display.

The grain and roots were very good—a vast improvement on the previous show, but still not a fair representation of what the Township can produce.

The horticultural display was very creditable, but not in quantity what we would desire to see.

We are gratified to mark the steady and increasing attention which is being paid to fruit culture, particularly the apple, which will, in time, be a great acquisition to this part of the country; and, in fact, there is at present a large trade to Montreal and the European markets.

In the dairy department, there were a great many fine loaves of bread and rolls of butter, and, judging from their appearance, would please the most fastidious taste.

The Directors gave a special prize for style and speed, which was the means of creating amusement for the crowd and elicited a spirited competition among those who entered for it. We were pained to see so many accidents happen while competing for the prize, and would recommend that, on future exhibitions, if we cannot procure a suitable place for showing, the prize be discontinued, as life and property are endangered by speeding horses on a narrow street, and we had a striking instance of the truth of it at our last fair. We also think that horse trots are quite foreign to the object for which such an association as ours was organized.

Underdraining in this Township, and, in fact, the whole Province, is yet in its infancy; but farmers are awakening to the vast importance and benefit derived from such means, but the high price of labour deters them from entering into such a work, as it would cost as much as a farm is worth to underdrain it properly.

Fertilizers are very scantily used beyond that which is derived from the barnyard; but where farmers have tried any of them, either guano, bone-dust, or superphosphate, they speak highly of the resulting advantages. Among us, plaster and ashes are the only description of fertilizer used, and they alone have a telling effect on our crops.

In general, agriculture is not carried on as extensively, or with as much profit, as might be desired; but we are pleased to note that the old system adopted by our forefathers is dying out, and a new order of things substituted in its stead, which, no doubt, is an improvement, and benefit to the farming community. And we think and hope that the generous advantages held out by the "Ontario Veterinary College," and Bureau of Agriculture, will greatly tend to the advancement of rural pursuits.

* * * * *

LONDON.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2751 04	
" 1090 Members' Subscriptions		1947 50	
" Legislative Grant		350 00	
" Interest		17 84	
			5066 38
Cr.			
By Paid to Western Fair Fund		4751 04	
" Working Expenses		122 34	
			4873 38
Balance in hand			193 00

REPORT.

Your Directors, in placing their report before you, are performing their last official act, their duties and term of office having now terminated. Very little requires to be said as to the position of the Society, its operations being almost altogether merged in the proceedings of the Western Fair. In receiving members' subscriptions and donations, which your Directors are happy to say have been most generously accorded by the citizens; in procuring the

annual Government grant, and in paying the same over to the Western Fair Fund, is comprised the services proper of your Society for the past year. The treasurer's statement will present to you sufficiently in detail the receipts and expenditure for the year, and the present monetary position of your Society. A statement of the proceedings of the Western Fair Association for the past year has been prepared, which, together with accounts properly audited, will be submitted at the proper time.

Western Fair.

(Including London and East Middlesex Electoral Division Societies.)

Dr.	$ cts.	$ cts.	$ cts.
To Receipts from A. S. Emery		961 55	
" " " City Society		4751 04	
" " " East Middlesex Society		635 00	
" Admissions to Show		5740 10	
" Proceeds Sale of Booths, Forage, &c.		936 83	
" Miscellaneous Receipts		210 07	
			13,234 59
Cr.			
By Prizes for Live Stock	2687 00		
" " Field Products	236 50		
" " Dairy " and Provisions	195 00		
" " Horticultural Products	599 50		
" " Agricultural Implements	386 75		
" " Arts and Manufactures	1340 50		
	5445 25		
Unpaid	94 50		
		5350 75	
" Printing and Stationery		609 02	
" Preparing Show Ground		501 77	
" Forage and Judges		391 93	
" Superintendents, Gate-keepers, &c.		585 00	
" Secretary, Treasurer, and Assistants		779 00	
" Miscellaneous items		606 65	
			8824 12
Balance in hand			4410 47

REPORT.

In reviewing the results of the past year's proceedings, the joint board of Directors feel justified in congratulating the members and patrons of the Western Fair on the success which has been obtained, a success the more complete because obtained under very unfavourable circumstances. Had the weather been more propitious, the attendance would have been much greater, the revenue proportionally increased, and more enjoyment derived by visitors and exhibitors; yet with all drawbacks your Directors can point to a financial success in an increased reserve fund.

As soon as practicable after the annual meetings of last year, a Joint Board of Directors, composed of the Directors of the East Middlesex and City of London Societies, was formed. Steps were at once taken for the issue of an increased and more liberal prize list, necessary printing, selection of judges, improvement of grounds, and all matters calculated to insure success. All funds on hand were paid over to the treasurer for Western Fair purposes, and your Directors have much pleasure in saying that, in carrying out the details, the Joint Board has worked very harmoniously and amicably together.

That the Western Fair, as an institution, is required, and is becoming appreciated in this section of country, is apparent from the growing interest which it is creating, not only in

the minds of those in the immediate neighbourhood, but also among agriculturists and manufacturers from all parts of the western portion of Ontario. Its growth and popularity may be gathered from a comparison of the number of entries for each year, respectively, during the three years in which the Fair has been held:

In 1868, total number of entries was 2,037.
In 1870, " " " " 4,169.
In 1871. " " " " 6,130.

The number of entries having been three times as many in the latter as in the former year. A plentiful harvest during the past season has tended to success; and the results of similar fairs held at Hamilton and Guelph conclusively prove that such institutions may be advantageously maintained.

To the gentlemen and ladies who kindly consented to act as judges, several of them at much inconvenience to themselves, the Directors feel greatly indebted, and hereby express their gratitude; exhibitors as a general rule, having expressed their satisfaction with the awards made.

The experience of the past years will enable the Directors for the coming year to guard against some of the defects which may have existed in the past, and so arrange their work as to give increased satisfaction in the future.

The treasurer's statement will contain a correct exhibit of the financial position of the Western Fair Association.

MIDDLESEX, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To 300 Members' Subscriptions		300 00	
" Admissions to Show		277 18	
" Legislative Grant		700 00	
" Miscellaneous Receipts		82 20	
			1359 38
Cr.			
By Balance due Treasurer		51 92	
" Prizes for Live Stock	361 00		
" " Field Products	55 35		
" " Dairy "	21 00		
" " Horticultural Products	24 30		
" " Agricultural Implements	33 75		
" " Arts and Manufactures	57 30		
		552 70	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		248 73	
" Working Expenses		170 31	
			1443 66
Balance due Treasurer			84 28

Adelaide.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		80 85	
" 50 Members' Subscriptions		50 00	
" Legislative Grant		52 30	
			183 15
Cr.			
By Prizes for Live Stock	67 35		
" Field Products	20 12		
" Dairy "	6 86		
" Horticultural Products	8 17		
" Agricultural Implements	6 00		

	$ cts.	$ cts.	$ cts.
By Ploughing Match	21 50		
		130 90	
" Working Expenses		20 41	
			150 41
Balance in hand			32 74

Biddulph.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		16 01	
" Members' Subscriptions		92 00	
" Admissions to Show		6 00	
" Legislative Grant		92 75	
			206 76
Cr.			
By Prizes for Live Stock	111 25		
" Field Products	13 00		
" " Dairy "	3 25		
" " Horticultural Products	7 25		
" " Agricultural Implements	14 50		
" " Arts and Manufactures	13 25		
		162 50	
" Prizes of previous year		3 00	
" Working Expenses		40 31	
			205 81
Balance in hand			0 95

Lobo.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 75	
" 57 Members' Subscriptions		57 00	
" Legislative Grant		57 35	
			135 10
Cr.			
By Prizes for Live Stock	61 60		
" " Field Products	14 75		
" " Dairy "	1 40		
" " Horticultural Products	15 40		
" " Agricultural Implements	3 90		
" " Arts and Manufactures	9 90		
		106 95	
" Working Expenses		30 70	
			137 65
Balance due Treasurer			2 55

McGillivray.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		44 62	
" Members' Subscriptions		74 25	
" Admissions to Show		3 35	
" Legislative Grant		72 50	
			194 72
Cr.			
By Prizes for Live Stock	88 50		
" " Field Products	14 75		
" " Dairy "	2 35		

	$ cts.	$ cts.	$ cts.
By Prizes for Horticultural Products	3 25		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	8 25		
	127 10		
Unpaid	20 00		
		107 16	
" Prizes of Previous Year		20 00	
" Preparing Show Grounds		3 50	
" Working Expenses		17 50	
			148 16
Balance in hand			46 62

Williams, West.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 59	
" 97 Members' Subscriptions		97 00	
" Admissions to Show		55 00	
" Legislative Grant		92 65	
" Donations		46 00	
			292 24
Cr.			
By Prizes for Live Stock	102 25		
" " Field Products	17 75		
" " Dairy "	8 25		
" " Horticultural Products	6 50		
" " Agricultural Implements	8 25		
" " Arts and Manufactures	19 75		
" " Ploughing Match	14 00		
		176 75	
" " Working Expenses		50 50	
			227 25
Balance in hand			64 99

Williams, East.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		0 59	
" 51 Members' Subscriptions		51 00	
" Legislative Grant		51 30	
			102 89
Cr.			
By Prizes for Live Stock	75 25		
" " Field Products	0 80		
" " Dairy "	1 15		
" " Horticultural Products	0 75		
" " Arts and Manufactures	1 50		
		79 45	
" Working Expenses		18 05	
			97 50
Balance in hand			5 39

MIDDLESEX, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		61 38	
" 357 Members' Subscriptions		372 00	
" Legislative Grant		700 00	
" Proceeds rent of Grounds		35 00	
			1168 38
Cr.			
" Legislative Grant to Township Societies		420 00	
" Paid Treasurer of Western Fair		635 00	
" Working Expenses		101 78	
			1156 78
Balance in hand			11 60

REPORT.

It is our duty as Directors to present to the Annual Meeting a Report of the proceedings of our Society during the past year, with such other remarks as appear to be interesting and useful.

In looking back over the past twelve months Canadians have abundant reason to be grateful for the blessings of health, peace, and prosperity with which our country has been eminently favoured. And we as agriculturists have especial cause for thankfulness as the past season has been the best for the farmer we have known for many years: grain crops of all kinds were good, and as we had fine weather for harvest the quality as well as the quantity was all we could expect. In view of the great importance of securing a regular change of seed grain, we would respectfully suggest that the Board of Agriculture take steps to import annually from the different grain growing countries of the world a small quantity of the various kinds most likely to succeed in this climate. This, under proper regulations, may be distributed through the Agricultural Societies to such individuals as would be willing to give it the proper attention. And if liberal prizes were offered at the principal Agricultural Exhibitions by the Provincial Association for the best samples grown from imported seed, we believe it would result in such an extended series of experiments as could scarcely fail to supply the farmers with a regular change of seed, which is allowed to be a benefit in all countries, and is more especially a necessity in America. A suggestion similar to this was made by your Directors some years ago. The warm interest manifested by the Government of late in maturing plans for the improvement of Agriculture has encouraged us to repeat it as we are convinced that if it is adopted it may prove of more advantage than some schemes that are vastly more expensive.

Amongst the inventions and manufactures, too numerous to mention, that have been introduced for the benefit of Agriculture, the establishment of several first class Tile Manufactories in this neighbourhood is likely to prove of great advantage: many farmers in past years have been prevented from draining as much as they wished by the difficulty of obtaining good tile at a moderate price.

The Treasurer will read to you the usual detailed financial statement of our Society, and the Treasurer of the Joint Board will present you the financial statement of the Western Fair at a general public meeting of the two Societies to be held in the City Hall this afternoon at 3 o'clock. We need not anticipate these reports, only to notice a few items for the purpose of comparing the present with the past. We are sorry to see that the number of members of our Society is not so large this year as the year previous, being 372 in 1871 and 469 in 1870; we are aware that the sole reason for this apparent decrease is the fact that a large number of members from the County pay their subscriptions directly to the City Society instead of the County, we know that it is sometimes more convenient to do so but we question if it is good policy.

It gives us great satisfaction to report that the results of the union of our Society with the City Society, for the purpose of establishing the "Western Fair," have exceeded our most sanguine expectations, after three years' experience we feel that we have every reason to congratulate you on its complete success. To judge of its progress we may remind you

that our prize list in 1868 was about $2000, in 1871 $8000. the entries in 1868, 4000, in 1871, 7000. And as a conclusive proof that the Western Fair can hold its own under almost any circumstances, we can point to the fact that although we offered $8000 in premiums, and provided a numerous staff and accommodation amply sufficient for any Provincial Show that has ever been held here, yet, in spite of the most unpropitious weather that undoubtedly diminished our receipts at the least $2000, we were still able to save about $600 on the year's operations, making our surplus fund at present $4410, instead of $3762 at the time of the Annual Meeting last year.

But it will not do for your Directors to rest on their laurels, the unparalleled success of the Western Fair has already induced Hamilton and Guelph, and will no doubt induce other localities to establish similar institutions, these will be to some extent competing Exhibitions, and it will require unabated activity on our part to hold our vantage ground.

But if the Directors act with the same economy, energy, and impartiality in the future as they have done heretofore, we have entire confidence that the Western Fair will still maintain the position it has already achieved as the leading Exhibition of Western Ontario.

* * * * *

Dorchester, North.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		57 88	
" 80 Members' Subscriptions		110 50	
" Legislative Grant		108 94	
			277 32
Cr.			
By Prizes for Live Stock	97 50		
" " Field Products	24 00		
" " Dairy "	8 75		
" " Horticultural Products	3 00		
" " Agricultural Implements	1 00		
" " Arts and Manufactures	10 00		
		144 25	
" Working Expenses		26 96	
			171 21
Balance in hand			106 11

London.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		106 32	
" Members' Subscriptions		218 00	
" Admissions to Show		9 60	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
			493 92
Cr.			
By Prizes for Live Stock	234 50		
" " Field Products	26 25		
" " Dairy "	3 25		
" " Horticultural Products	8 00		
" " Agricultural Implements	2 50		
" " Arts and Manufactures	20 50		
		295 00	
" Working Expenses		51 02	
			346 02
Balance in hand			147 90

Vaughan, West.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		51 20	
" 97 Members' Subscriptions		97 00	
" Legislative Grant		99 18	
			247 38
Cr.			
By Prizes for Live Stock	95 30		
" " Field Products	34 00		
" " Dairy "	8 00		
" " Agricultural Implements	20 00		
" Arts and Manufactures	12 00		
		169 30	
" Working Expenses		19 50	
			188 80
Balance in hand			58 58

Westminster.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		5 37	
" 74 Members' Subscriptions		74 00	
" Legislative Grant		72 02	
" J. Elliot, donation		20 00	
			171 39
Cr.			
By Prizes for Live Stock	94 50		
" " Field Products	45 75		
" Horticultural Products	4 75		
		145 00	
" Working Expenses		30 25	
			175 25
Balance in hand			3 86

MIDDLESEX, WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		141 32	
" 127 Members' Subscriptions		137 50	
" Admissions to Show		198 44	
" Legislative Grant		700 00	
" Proceeds Rent of Ground		50 00	
			1227 26
Cr.			
By Prizes for Live Stock	205 40		
" " Field Products	34 65		
" " Dairy "	10 45		
" " Horticultural Products	20 00		
" " Agricultural Implements	49 65		
" " Arts and Manufactures	51 00		
	371 15		
Unpaid	41 55		
		329 60	

Cr.	$ cts.	$ cts.
By Prizes of past year	16 10	
" Legislative Grant to Township Societies	413 68	
" Preparing Show Grounds	153 72	
" Agricultural Publications	4 00	
" Working Expenses	131 40	
		1048 50
Balance in hand		178 76

REPORT.

The year 1871 has been one of prosperity for the farmers of Middlesex. The grain crops were abundant in yield and of the best quality: much above the average yield of any year since 1855. The hay crop, with that of roots, was deficient in quantity, but of good quality. Fruit of all the varieties usually grown in Ontario was abundant, but smaller in size than usual, caused by the dry weather. Dairies did not produce the usual quantity of butter and cheese from the same cause.

The past has been a most favourable season for clearing and draining of swamp lands.

This Society held its fall show on 6th Oct. last, which was attended by about 300 people. The display of domestic animals, grain, fruit, roots, farm implements, carriages, ladies' work, and the various manufactured articles was creditable to the mechanics, farmers, their wives and daughters that produced them.

Your Board have expended a considerable sum in fencing, tree planting and otherwise improving the agricultural grounds, and recommend that a much larger sum be expended in 1872 for same purpose: that a new and sightly Hall be erected, in accordance with a plan herewith furnished, wherein to exhibit ladies' work, fancy articles and works of art; and that the councils of Middlesex and Strathroy be solicited to grant aid towards the erection thereof.

* * * * *

It is with deep regret that your Board announce its loss by the death of Captain Beer during the past year—one of its founders and promoters, a pioneer in the Township of Metcalfe, an extensive farmer and stock breeder, one who has always taken an active and lively interest in the cause of agriculture.

* * * * *

Caradoc.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 36	
" Members' Subscriptions		76 00	
" Admissions to Show		6 00	
" Legislative Grant		76 56	
			160 92
Cr.			
By Prizes for Live Stock	70 25		
" " Field Products	21 15		
" " Dairy	3 00		
" " Horticultural Products	19 35		
" " Agricultural Implements	1 75		
	115 50		
Unpaid	13 70		
		101 80	
" Working Expenses		27 25	
			129 05
Balance in hand			31 87

Ekfrid.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		32 87	
" 83 Members' Subscriptions		79 85	
" Admissions to Show		13 50	
" Legislative Grant		79 06	
			205 28
Cr.			
By Prizes for Live Stock	96 90		
" " Field Products	27 10		
" " Dairy "	5 75		
" " Horticultural Products	3 80		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	18 25		
	161 80		
Unpaid	41 60		
		120 20	
" Prize of Last Year		1 25	
" Working Expenses		23 03	
			144 48
Balance in hand			60 80

Metcalfe.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 36	
" 107 Members' Subscriptions		146 00	
" Legislative Grant		140 00	
" Proceeds Sale of Stock		24 71	
			313 07
Cr.			
By Purchase of Live Stock		223 20	
" Working Expenses		21 81	
			245 01
Balance in hand			68 06

Mosa.

Dr	$ cts.	$ cts.	$ cts.
To Balance in hand		108 33	
" 142 Members' Subscriptions		143 00	
" Legislative Grant		118 33	
			369 66
Cr.			
By Prizes for Live Stock	109 40		
" " Field Products	28 30		
" " Dairy "	9 75		
" " Horticultural Products	11 55		
" " Agricultural Implements	9 75		
" " Arts and Manufactures	22 25		
		191 00	
" Preparing Show Grounds		2 73	
" Working Expenses		41 00	
			234 73
Balance in hand			134 93

REPORT.

The President and Directors, in presenting their Annual Report, have much pleasure in expressing their satisfaction at the prosperous condition of the Society, and the success that attended the exhibition held last October by the Society. There were about 350 entries. The show of horses—in their several grades of draught, general purposes, brood mares, and young colts—was excellent. The display of cattle was good. In the sheep department they were not so good as at our last show. There was a fine display of pigs. The show of the different kinds of grain was really good, especially wheat. The roots and other vegetable productions were all good, especially the potatoes: we think they could not be surpassed. The dairy productions were excellent. In fruit, a very choice collection of the various kinds was shown. The special prizes which were offered by the merchants of Wardsville added much to our show. The Society has not had any ploughing match during the year, on account of the very dry autumn, which made the ground unfit for ploughing.

* * * * *

MONCK.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		40 14	
" 161 Members' Subscriptions		167 00	
" Admissions to Show		276 45	
" Legislative Grant		700 00	
" Miscellaneous Receipts		50 44	
			1234 03
Cr.			
By Prizes for Live Stock	287 50		
" " Field Products	82 34		
" " Dairy "	10 00		
" " Horticultural Products	21 82		
" " Agricultural Implements	10 75		
" " Arts and Manufactures	55 14		
" " Special Prizes	35 00		
		502 55	
" Legislative Grant to Township Societies		415 73	
" Preparing Show Grounds		257 00	
" Working Expenses		133 90	
			1309 18
Balance due Treasurer			75 15

REPORT.

* * * * *

The spring show of this Society was held on the Society's grounds, at Wellandport, on the 26th day of April last. The entries and competition were creditable, but not what they ought to have been. There were 14 entries of horses, and 8 of bulls. The amount paid in prizes was $54.00.

The Society's fall show was held also at Wellandport, on the 17th and 18th days of October last, and was well attended. The entries numbered 1200, being an increase of 200 on the previous year. This must be considered very satisfactory when you take into consideration that the prizes we were compelled to offer were not large, in consequence of the demand on the treasury to meet the payments falling due from the Society consequent upon the purchase of grounds and the improvements thereon.

* * * * *

Your Directors would recommend to the consideration of the incoming board the advisability of holding a county ploughing match, as it must add much to the general object for which Agricultural Societies are formed.

Your Directors have good reason to congratulate the Society on its past success, as well

as on the bright future in store for it; two, or at most three, years will show the Society released from all incumbrances, which will enable its officers to increase the prize lists both in numbers and amount.

Your Directors beg to say that Divine Providence has been pleased to bless this province with an abundant harvest which has brought smiles to the faces of the toiling husbandmen; and it is with pleasure they can report that the crops within the limits of this Society are greater than the average.

In looking back over the eventful year which has just closed, your Directors desire to acknowledge the hand of a merciful Providence in preserving this people from the devouring plague that once threatened our land: in protecting us from devastating flames, which have laid waste cities and left hundreds of thousands of His creatures homeless: in the bounteous harvest with which He has blest this people: and in the general peace and prosperity which prevail throughout the whole of this Dominion: and they feel that they cannot close this report without rendering (with all reverence and humility) that gratitude which is due to Him from whom all blessings flow.

Caistor.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 00	
" 55 Members' Subscriptions		57 50	
" Legislative Grant		56 63	
" Municipal Grant		19 00	
			144 13
Cr.			
By Prizes for Live Stock	77 05		
" " Field Products	13 25		
" " Dairy "	1 00		
" " Horticultural Products	3 15		
" " Arts and Manufactures	10 65		
		105 10	
" Preparing Show Grounds		3 09	
" Agricultural Publications		3 75	
" Working Expenses		23 19	
			135 13
Balance in hand			9 0

Gainsborough.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		24 94	
" Members' Subscriptions		73 95	
" Admissions to Show		15 30	
" Legislative Grant		71 69	
" Municipal Grant		30 00	
" Miscellaneous Receipts		27 00	
			242 88
Cr.			
By Prizes for Live Stock	76 74		
" " Field Products	21 06		
" " Dairy "	4 85		
" " Horticultural Products	12 32		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	14 78		
" " Ploughing Match	52 00		
		183 75	
" Working Expenses		25 83	
			209 58
Balance in hand			33 30

Pelham.

Dr.	$ cts	$ cts.	$ cts.
To Balance in hand		66 69	
" 114 Members' Subscriptions		114 00	
" Legislative Grant		112 37	
			293 06
Cr.			
By Prizes for Live Stock	135 75		
" " Field Products	35 42		
" " Dairy "	6 17		
" " Horticultural Products	10 69		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	27 77		
		217 80	
" Working Expenses		33 48	
			251 28
Balance in hand			41 78

Wainfleet.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		58 15	
" 62 Members' Subscriptions		64 15	
" Legislative Grant		56 48	
			178 78
Cr.			
By Prizes for Live Stock	99 85		
" " Field Products	28 15		
" " Dairy "	3 70		
" " Horticultural Products	8 90		
" " Arts and Manufactures	20 85		
	161 45		
Unpaid	7 65		
		153 80	
" Working Expenses		16 81	
			170 61
Balance in hand			8 17

Western Bank (Dunnville & Sherbrook.)

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		78 96	
" 155 Members' Subscriptions		157 00	
" Admissions to Show		19 00	
" Legislative Grant		118 56	
" Municipal Grant		10 00	
" Miscellaneous Receipts		26 15	
			409 67
Cr.			
By Prizes for Live Stock	141 00		
" " Field Products	53 00		
" " Dairy "	4 50		
" " Horticultural Products	10 25		
" " Agricultural Implements	9 00		
" " Arts and Manufactures	39 00		
		256 75	
" Prizes Spring Show		23 00	

	$ cts.	$ cts.
By Prizes of previous year,	13 50	
" Preparing Show Grounds	37 50	
" Working Expenses	67 03	
		337 76
Balance in hand		11 89

REPORT.

* * * * *

The Spring Show was held in Dunnville, on the 22nd of April last. Truth compels your officers to say that the Spring Show was a most paltry affair, there being but very few horses exhibited and only two bulls: the animals shown, however, were of very good quality. The prizes awarded amounted to $23, which have since been paid. Owing to the apathy which seems to exist in this part of the country respecting the matter of the Spring Show, your directors would recommend that for the present, at least, the Spring Show be discontinued.

At a meeting of your officers, on the 18th of March last, a deputation from a sister Society in Dunn was present, and asked for the co-operation of this Society in establishing quarterly fairs for the sale of stock. Thinking it would be advantageous to the agriculturists in this Section, your directors at once cheerfully joined in the scheme, and the first fair was held at Dunnville, on the last Wednesday in April. The result did not come up to the expectation of its promoters and has for the present been discontinued.

The Society's Fall Show was also held in Dunville, on the 20th of October and was well attended. The number of entries was 726, being one hundred more than last year. The amount paid in prizes was $256.75, also being much greater than the amount paid last year. Every class was well represented and all the prizes offered were taken up, and all have since been paid. With the exception of one or two trifling matters, the decisions of the judges seemed to be cheerfully accepted by the competitors, and on the whole the Fall Show of 1871 has proved greatly superior to any of the preceding ones.

Your Directors contemplated holding a ploughing match in connection with the Society, and some very liberal prizes were offered by Messrs. Yocom, and Wardle & Sholfield, to assist the Society to increase the prizes, but owing to the early frosts in November it was unavoidably postponed. Your Directors would recommend that an effort be made to hold a ploughing match in the Spring.

* * * * *

Your Directors desire to mention that the utmost good feeling has been shown to them by all the members of the Society, and would express a hope that the same kind feeling be continued in future, as the prosperity of all human organizations depends greatly on the perfect unanimity which should exist with all connected with it.

* * * * *

In looking over the events of the past year, your Directors feel that in the peace which has reigned, in the preservation from flames, which have devastated sections of this and other lands for the preservation from plague which at one time threatened this Province, and for the abundant and bountiful harvest that has been given this people, we should with humility and heartfelt gratitude express our thanks to the Great Disposer of events for all His various and manifold blessings to us.

NIAGARA.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		144 86	
" 120 Members' Subscriptions		126 00	
" Admissions to Show		27 63	
" Legislative Grant		350 00	
" Municipal Grant		120 00	
			768 49

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	212 00		
" " Field Products	69 75		
" " Dairy "	18 75		
" " Horticultural Products	106 00		
" " Agricultural Implements	15 00		
" " Arts and Manufactures	50 50		
" " Growing Crops	20 00		
		492 00	
" Prizes of previous year		22 00	
" Preparing Show Grounds		18 14	
" Working Expenses		104 82	
			636 96
Balance in hand			131 53

REPORT.

Before surrendering the powers committed to them, the Directors of the Society would wish to submit to the members the following report: and in doing so they have great pleasure in congratulating them upon the results of the past year, both as regards the prosperity of the country and our own Society.

At the annual show, the number of entries was 200 larger than those we ever had before. The past years show a steady and progressive increase, very creditable to your Society and gratifying to your Directors. The show itself fully sustained the high position it has attained as regards the specialties, and more than equalled the average shows as regards stock. It is to be hoped that soon we shall be as able to compete with sister societies in stock as we are in grain and fruits. It is a matter of satisfaction (thanks to the Galloway Society) to see our locality carry away so many prizes from the Provincial Exhibition, as well as from London, Guelph, Toronto, and other places. As regards that portion of Ontario covered by your Society, the results of the past year are such as call for thankfulness to the Giver of every good. It has been remarkably healthy, and the crops of grain have been on the whole above the average, with good prices to reward our labours. The crop of fruit did not justify the fears that were entertained at the earlier part of the season; for though not quite an average, it was much better than was expected, whilst the prices more than compensated for the deficiency.

The past two seasons have been to some extent exceptional ones,—that of 1870 was wet and warm, whilst 1871 was dry and warm, in both cases ripening our fruits before the usual time, and thus injuring their keeping qualities. Your committee would call the attention of the members of this Society to the fact that the Colorado potato bug is now amongst us, having now almost crossed the continent of America. Its habits have been so closely studied by those who have suffered from it, that a knowledge of them has been learned, so as to enable us to combat it, and to a large extent successfully. It has been found that Paris green dusted on the leaves is a sure poison: and arrangements have been made by the Bureau of Agriculture with some of our wholesale chemists to supply the article in pound packages, with printed directions for use, at a moderate rate.

As anything that tends to facilitate the moving of produce to market is equivalent to an increase of price, and as the means of receiving and shipping, our grains especially, are very inconvenient, it is a matter worth your consideration, as individuals, to see if some better way cannot be devised through which our produce could reach the markets.

* * * * *

NORTHUMBERLAND, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		128 53	
" 77 Members' Subscriptions		77 00	

Dr.	$ cts.	$ cts.	$ cts.
To Admissions to Show		24 25	
" Legislative Grant		700 00	
" Miscellaneous Receipts		7 55	
Cr.			937 31
By Prizes for Live Stock	242 24		
" " Field Products	28 37		
" " Dairy "	12 75		
" " Horticultural Products	11 25		
" " Agricultural Implements	8 25		
" " Arts and Manufactures	57 62		
	360 48		
Unpaid	16 88		
		343 60	
" Prizes of previous year		20 00	
" Legislative Grant to Township Societies		343 00	
" Working Expenses		71 53	
			778 13
Balance in hand			159 20

REPORT.

* * * * *

The Society's annual exhibition, held in the Village of Brighton, in October last, was not as successful as your Directors would have wished, owing to the unsatisfactory accommodation, the different departments being so distributed over the village, which plainly shows the necessity of having suitable preparation for holding such exhibitions. Had the show been more compact, we have good reason to believe it would have been equal to any former show of this Society.

The state of agriculture in the Riding is fast progressing: the farming community on old cleared-up farms are evincing a desire for better cultivation, and are showing great anxiety to bring their farms to such a state of cultivation that labour-saving machinery may be profitably used.

We would also recommend farmers to pay more attention to their trees and orchards, as we have soil and climate well adapted to the cultivation of some of the most valuable kinds of fruit; and if a considerable portion of the land in this Riding were planted in orchard, we believe it could not be more profitably occupied, judging from the samples of fruit exhibited at our annual show.

* * * * *

Brighton.

Dr.	$ cts.	$ cts.	$ cts.
To 83 Members' Subscriptions		83 00	
" Legislative Grant		43 66	
			126 66
Cr.			
Working Expenses		66 45	
			66 45
Balance in hand			60 2

Note.—This Society held no Exhibition during the past year.

Cramahe.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		33 89	
" Members' Subscriptions		94 00	

	$ cts.	$ cts.	$ cts.
To Admissions to Show		12 85	
" Legislative Grant		84 00	
			224 71
Cr.			
By Prizes for Live Stock	68 10		
" " Field Products	12 45		
" " Dairy "	4 00		
" " Horticultural Products	7 55		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	35 15		
" " Growing Crops	9 50		
		139 75	
" Agricultural Publications		59 80	
" Working Expenses		25 00	
			224 55
Balance in hand			0 19

REPORT.

The Directors, in accordance with law, beg leave to submit their Annual Report, and in doing so they take pleasure in congratulating you on the abundant harvest with which our country has been blessed during the past season. And notwithstanding its dryness in this locality, nearly all crops have been above an average yield, and superior in quality to those of any former year.

At the Exhibition held in Castleton in the month of October last, the number of entries was not as great as at the Exhibition of the previous year, being for 1871, 702, for 1870, 804—difference 102. The most noticeable deficiency was in the departments of Stock and Mechanics' Work.

The different classes of grain, roots, domestic industry, horticulture, and ladies' work, were tolerably well filled, and as regards grain of all kinds it was frequently remarked by intelligent farmers and other visitors that a better sample was never before exhibited in Cramahe. Roots also were very good for the season, and in dairy products cheese (factory make) was in greater abundance than at any former exhibition; and as another factory is in contemplation, it shows at once the advancement farmers are making in that department. In fruit and vegetables there were some excellent specimens, which gave to the inside department of the exhibition a most cheering and delightful aspect.

As regards ladies' work, it was beyond all praise. It far excelled, both in quantity and quality, any Exhibition of previous years.

Murray.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		61 75	
" Members' Subscriptions		83 00	
" Admissions to Show		11 75	
" Legislative Grant		74 00	
			230 50
Cr.			
By Prizes for Live Stock	91 95		
" " Field Products	15 75		
" " Horticultural Products	2 36		
" " Arts and Manufactures	44 33		
		154 39	
" Working Expenses		31 00	
			185 39
Balance in hand			45 11

Percy.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		62 32	
" 118 Members' Subscriptions		127 25	
" Admissions to Show		10 55	
" Legislative Grant		114 00	
			314 12
Cr.			
By Prizes for Live Stock	115 25		
" " Field Products	22 65		
" " Dairy "	6 00		
" " Horticultural Products	6 80		
" " Agricultural Implements	13 70		
" " Arts and Manufactures	20 89		
		185 29	
" Agricultural Publications		67 25	
" Working Expenses		27 98	
			280 52
Balance in hand			33 60

REPORT.

We have great pleasure in reporting that our Society has, for the last year, been a success, both in the large membership and in our annual show, which far exceeded any show of this Society for some years.

The show of young horses was excellent. Colts three years old and younger showed a marked improvement to former years. In thorough-bred cattle, we are glad to report that some of our influential farmers have done themselves great credit in bringing in some fine thorough-breds, which are leaving a marked improvement in Durham and Ayrshire cattle. In sheep, both long wool and South Down, the classes were well represented and very fine animals were exhibited. In pigs, the show far exceeded former years. In grain and seeds, the show was excellent: all the samples were of good quality, and of splendid appearance The show of roots was rather inferior to former years, owing to the dry weather of last season.

Your Directors regret much that there is no manufacturing establishment for implements in this Township, but are glad to report that there is a goodly number of labour-saving machines already brought into the Township, and that farming generally is very much improved in this locality.

* * * * *

Seymour.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		32 99	
" 87 Members' Subscriptions		87 00	
" Admissions to Show		4 55	
" Legislative Grant		71 00	
			195 54
Cr.			
By Prizes for Live Stock	34 50		
" " Field Products	22 00		
" " Dairy "	4 00		
" " Horticultural Products	7 00		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	2 75		
" " Ploughing Match	15 00		
	88 25		
Unpaid	15 75		
		72 50	

	$ cts.	$ cts.	$ cts.
" Agricultural Publications		51 35	
" Working Expenses		34 97	
			158 82
Balance in hand			36 72

REPORT.

The Officers and Directors of the Seymour Agricultural Society beg leave to report the proceedings and operations of the same for the past year, as follows:

Members of the Society have each been supplied with a copy of the *Canada Farmer*.

A ploughing match was held on the 14th of October, when prizes to the amount of eighteen dollars were offered, but owing to fears being entertained by ploughmen generally, that, in consequence of the drought the land would be unfit to plough, the attendance thereat was small and fifteen dollars only were awarded.

An exhibition was held on the 17th of October, when premiums amounting to the sum of eighty-eight dollars and twenty-five cents were awarded. Considering the number of your members, the show in our opinion was creditable, especially in horses, sheep, grain and in root and other hoed crops.

* * * * *

There is no change in our agriculture worthy of note, the township being emphatically a grain growing township, though the tendency of late years unquestionably shows increased attention to the dairy.

The horticulture, or, perhaps more properly speaking, the fruit crop in our bounds is annually increasing. The quality and quantity of the produce of the orchards in bearing is very encouraging; but it is a matter of regret that fruit culture does not receive the attention its importance demands.

Grapes are being successfully grown in our township, and in one instance wine has this season been manufactured, intended for market.

There are two extensive woollen factories here, constantly in operation, which we are happy to say are unable to supply the demand for their articles of manufacture.

A large portion of the wheat produced in the neighbourhood is manufactured here, and sent to market in barrels.

* * * * *

NORTHUMBERLAND, WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		65 88	
" 215 Members' Subscriptions		215 00	
" Admissions to Show		104 95	
" Legislative Grant		700 00	
" Municipal Grant		30 00	
			1115 83
Cr.			
By Prizes for Live Stock	294 50		
" " Field Products	131 75		
" " Dairy "	18 00		
" " Horticultural Products	19 25		
" " Agricultural Implements	59 25		
" " Arts and Manufactures	81 75		
		604 50	
" Legislative Grant to Township Societies		356 55	
" Preparing Show Grounds		32 00	
" Working Expenses		74 38	
			1067 43
Balance in hand			48 40

REPORT.

The Directors of the West Riding of the County of Northumberland Agricultural Society have to report the number of members for 1871 as 215, being seventeen more than for 1870.

The Spring Fair and Shows were again held to whicht he Town Council of Cobourg contributed $30, and the amount of premiums offered was $59, of which $51·50 were taken up.

The Fall Show was held as usual, in October, for two days, and was a most perfect success, both as regards the quantity and quality of the articles exhibited. There were at the two shows 1,400 entries. The amount offered was $729·25, of which $604·50 were taken up.

* * * * *

The past season has proved very productive, although, from the drought in the earlier part, the hay crop was light, the cereal and root crops have been above an average.

* * * * *

Alnwick.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		72 09	
" 54 Members' Subscriptions		54 00	
" Admissions to Show		40 61	
" Legislative Grant		41 61	
			208 31
Cr.			
By Prizes for Live Stock	86 70		
" " Field Products	38 50		
" " Dairy "	2 25		
" " Horticultural Products	7 50		
" " Agricultural Implements	15 30		
" " Arts and Manufactures	21 58		
		171 83	
" Preparing Show Grounds		16 60	
" Working Expenses		6 00	
			194 43
Balance in hand			13 88

Haldimand.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		54 82	
" 133 Members' Subscriptions		133 00	
" Admissions to Show		64 00	
" Legislative Grant		102 50	
" Municipal Grant for Agricultural Hall		500 00	
			854 32
Cr.			
By Prizes for Live Stock	123 00		
" Field Products	48 00		
" " Dairy "	9 25		
" " Horticultural Products	13 25		
" " Agricultural Implements	5 00		
" " Arts and Manufactures	54 00		
		252 50	
" Agricultural Hall		500 00	
" Working Expenses		26 23	
			778 73
Balance in hand			75 59

REPORT.

Your Directors, in presenting their Annual Report, take pleasure in stating that the finances of the Society are in a favourable position. The Treasurer's Report, which will be laid before you, shows a balance to the credit of the Society of seventy-five dollars fifty-nine cents, sundry accounts yet to be met reducing that amount about twenty dollars.

In March last a Committee was appointed to wait upon the County Society of the West Riding of Northumberland and the Township of Hamilton Agricultural Society, for the purpose of taking into consideration the propriety of forming a union Show. As no arrangement could be made satisfactory to all parties, the matter was allowed to drop.

Your Directors deemed it advisable to hold the Township Show at Centreton this present year. The day being fine, a large number was in attendance, and the entries exceeded all previous years, although the money collected at the doors was somewhat less than usual. An Agricultural Hall has been erected at Centreton, at an expense of five hundred dollars, the funds having been granted by the Township Council for that purpose; and your Directors are pleased to be able to lay before you a free deed of the land on which the building stands.

Your Directors also wish to report the completion of the Grafton Cheese Factory mentioned in last year's Report, which has been in successful operation during the year, but, owing to the dry season and the unusual low price of cheese, we fear the patrons will not find it so remunerative as anticipated; but as the factory is an excellent one, no doubt but it will meet their expectations in any ordinary season, and ultimately be a great benefit to the community.

Hamilton.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		29 29	
" 235 Members' Subscriptions		288 25	
" Admissions to Show		54 36	
" Legislative Grant		140 00	
" Miscellaneous Receipts		4 40	
			516 36
Cr.			
By Prizes for Live Stock	123 25		
" " Field Products	60 25		
" " Dairy "	11 50		
" " Horticultural Products	13 25		
" " Agricultural Implements	14 00		
" " Arts and Manufactures	53 25		
" " Growing Crops	19 50		
		295 00	
" Preparing Show Grounds		10 00	
" Agricultural Publications		126 00	
" Working Expenses		42 87	
			473 87
Balance in hand			42 43

Note.—The annual exhibition proved a complete success. All descriptions of live stock, except Devons and short wool sheep, were of good quality. Considering the dryness of the season, the crops generally were satisfactory.

Cobourg Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		102 77	
" 98 Members' Subscriptions		98 00	
" Admissions to Show		52 57	
" Legislative Grant		72 44	
			325 78

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Fruits	36 75		
" " Flowers and Plants	44 75		
" " Vegetables	52 25		
		133 75	
" Fine Arts and Ladies' Work		50 00	
" Preparing for Show		18 50	
" Working Expenses		17 50	
			219 75
Balance in hand			106 03

NORFOLK, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To 100 Members' Subscriptions		100 00	
" Admissions to Show		458 24	
" Legislative Grant		700 00	
" Municipal Grant		200 00	
" Proceeds Rent of ground		58 50	
" S. Norfolk Society		270 63	
			1787 37
Cr.			
By Balance due Treasurer		55 08	
" Prizes for Live Stock	495 00		
" " Field Products	118 00		
" " Dairy "	13 00		
" " Horticultural Products	44 75		
" " Agricultural Implements	57 75		
" " Arts and Manufactures	76 75		
		805 25	
" Prizes of last year		6 00	
" Legislative Grant to Township Societies		377 33	
" Preparing Show Grounds		301 82	
" Interest on Grounds		38 50	
" Working Expenses		203 39	
			1787 37
			0 00

Middleton.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		59 43	
" Members' Subscriptions		134 00	
" Admissions to Show		6 00	
" Legislative Grant		140 00	
			339 43
By Prizes for Live Stock	120 65		
" " Field Products	36 91		
" " Dairy "	4 50		
" " Horticultural Products	9 17		
" " Agricultural Implements	2 50		
" " Arts and Manufactures	35 27		
	209 00		
Unpaid	15 56		
		193 44	
" Preparing Show Grounds		10 45	

	$ cts.	$ cts.	$ cts.
By Working Expenses		43 20	
			247 09
Balance in hand			92 34

Toronto.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		151 64	
" 113 Members' subscriptions		113 00	
" Admissions to Show		114 67	
" Legislative Grant		140 00	
" Subscriptions		150 00	
" Miscellaneous Receipts		6 28	
			675 59
Cr.			
By Prizes for Live Stock	134 50		
" " Field Products	37 50		
" " Dairy and Horticultural Products	17 55		
" " Arts and Manufactures	43 60		
		233 15	
" Preparing Show Grounds		227 12	
" Purchase of Grounds		149 12	
			609 39
Balance in hand			66 20

Windham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		57 92	
" Members' Subscriptions		74 00	
" Admissions to Show		4 00	
" Legislative Grant		97 33	
			233 25
Cr.			
By Prizes for Live Stock	105 50		
" " Field Products	35 50		
" " Dairy "	2 25		
" " Horticultural Products	5 00		
" " Agricultural Implements	5 00		
" " Arts and Manufactures	27 00		
		180 25	
" " Working Expenses		14 00	
			194 25
Balance in hand			39 00

NORFOLK, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		246 32	
" Members' Subscriptions		82 00	
" Legislative Grant		700 00	
			1028 32
Cr.			
By Legislative Grant to Township Societies		389 00	
" Paid N. Simcoe Society for Union Show		274 40	

	$ cts.	$ cts.	$ cts.
By Purchase of Grounds		200 00	
" Agricultural Publications		12 60	
" Working Expenses		53 45	
			929 45
Balance in hand			98 87

Charlotteville.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		59 66	
" 83 Members' Subscriptions		83 00	
" Legislative Grant		80 00	
			222 66
Cr.			
By Prizes for Live Stock	112 50		
" " Field Products	32 04		
" " Dairy "	4 00		
" " Horticultural Products	3 22		
" " Agricultural Implements	2 00		
" " Arts and Manufactures	6 32		
		160 08	
" Working Expenses		25 25	
			185 33
Balance in hand			37 33

Walsingham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		8 73	
" 59 Members' Subscriptions		63 50	
" Legislative Grant		56 00	
" Cash from County Society for holding County Show in Simcoe		150 00	
			278 23
Cr.			
By Prizes for Live Stock	95 50		
" " Field Products	45 00		
" " Dairy "	9 00		
" " Horticultural Products	12 00		
" " Arts and Manufactures	15 00		
		176 50	
" " Prizes of previous year		5 00	
" Working Expenses		27 90	
			209 40
Balance in hand			68 83

Woodhouse.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		110 49	
" 103 Members' Subscriptions		103 00	
" Admissions to Show		16 00	
" Legislative Grant		103 00	
			332 49
Cr.			
By Prizes for Live Stock	151 25		
" " Field Products	35 40		

	$ cts.	$ cts.	$ cts.
By Prizes for Dairy Products	2 50		
" " Horticultural Products	9 85		
" " Agricultural Implements	4 20		
" " Arts and Manufactures	15 80		
		219 00	
" Working Expenses		53 00	
			272 00
Balance in hand			60 49

ONTARIO. NORTH.

Dr.	$ cts.	$ cts	$ cts
To Balance in hand		127 72	
" 293 Members' Subscriptions		293 00	
" Admissions to Show		568 25	
" Legislative Grant		700 00	
" Donations to Ploughing Match		77 00	
" Uxbridge Society for Union Show		32 13	
" Miscellaneous Receipts		85 00	
			1883 10
Cr.			
By Prizes for Live Stock	331 00		
" " Field Products	74 00		
" " Dairy "	13 00		
" " Horticultural Products	21 50		
" " Agricultural Implements	77 50		
" " Arts and Manufactures	185 75		
" " Growing Crops	18 00		
" " Ploughing Match	97 00		
	817 75		
Unpaid	104 75		
		713 00	
" Prizes of Previous Year		225 25	
" Legislative Grant to Township Societies		418 95	
" Preparing Show Grounds		45 06	
" Working Expenses, including Ploughing Match, Printing &c		226 44	
			1628 70
Balance in hand			254 40

Brock.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		22 32	
" 119 Members' Subscription		119 00	
" Admissions to Show		75 20	
" Legislative Grant		73 71	
" Donations		52 75	
			342 98
Cr.			
By Prizes for Live Stock	124 00		
" " Field Products	2 50		
" " Dairy "	13 00		
" " Horticultural Products	5 75		
" " Agricultural Implements	8 00		

	$ cts.	$ cts.	$ cts.
Cr.			
By Prizes for Arts and Manufactures	33 75		
" " Ploughing Match	57 00		
		244 00	
" " Prizes of Last Year		1 50	
" Working Expenses		64 50	
			310 00
Balance in hand			32 98

Mara and Rama.

	$ cts.	$ cts.	$ cts.
Dr.			
To 161 Members' Subscriptions		183 90	
" Legislative Grant		89 46	
" Municipal Grant		40 00	
" Borrowed for Purchase of Live Stock		100 00	
" Miscellaneous Receipts		13 50	
			426 86
Cr.			
By Balance due Treasurer		3 10	
" Prizes for Live Stock	86 25		
" " Field Products	18 50		
" " Dairy "	3 25		
" " Horticultural Products	5 00		
" " Arts and Manufactures	5 50		
		118 50	
" Prizes for past year		33 30	
" Preparing Show Grounds		5 75	
" Purchase of Live Stock		214 80	
" Working Expenses		56 43	
			431 88
Balance due Treasurer			5 02

Reach and Scugog.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		56 70	
" 127 Members' Subscriptions		140 00	
" Admissions to Show		53 50	
" Legislative Grant		88 20	
" Miscellaneous Receipts		2 00	
			340 40
Cr.			
By Prizes for Live Stock	211 00		
" " Field Products	11 00		
" " Dairy "	5 75		
" " Horticultural Products	3 50		
" " Agricultural Implements	28 50		
" " Arts and Manufactures	25 25		
	285 00		
Unpaid	41 25		
		243 75	
" Prizes for previous year		26 50	
" Preparing Show Grounds		1 25	
" Working Expenses		41 50	
			313 00
Balance in hand			27 40

Scott.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		14 87	
" 139 Members' Subscriptions		143 00	
" Admissions to Show		14 67	
" Legislative Grant		90 09	
" Miscellaneous Receipts		21 00	
			283 63
Cr.			
By Prizes for Live Stock	141 00		
" " Field Products	29 00		
" " Dairy "	9 00		
" " Horticultural Products	14 50		
" " Agricultural Implements	1 00		
" " Arts and Manufactures	18 50		
		213 00	
" Working Expenses		30 40	
			243 40
Balance in hand			40 23

Thorah.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		135 78	
" 74 Members' Subscriptions		74 00	
" Admissions to Show		22 10	
" Legislative Grant		45 36	
			277 24
Cr.			
By Prizes for Live Stock	56 75		
" " Field Products	15 75		
" " Dairy "	9 75		
" " Horticultural Products	12 75		
" " Agricultural Implements	10 00		
" " Arts and Manufactures	29 00		
	134 00		
Unpaid	21 00		
		113 00	
" Prizes for Previous Year		8 25	
" Amount included in account 1871		51 75	
" " Working Expenses		45 03	
			218 03
Balance in hand			59 21

Uxbridge.

Dr.	$ cts.	$ cts.	$ cts.
To 51 Members' Subscriptions		51 00	
" Legislative Grant		32 13	
			83 13
Cr.			
By Balance due Treasurer		60 11	
" County Society for Show		68 13	
" Working Expenses		8 00	
			136 24
Balance due Treasurer			53 11

Note.—This Society united with that of the County for holding a fall show.

ONTARIO, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		474 24	
" 461 Members' Subscriptions		532 80	
" Admissions to Show		773 43	
" Legislative Grant		700 00	
" Miscellaneous Receipts		62 00	
			2542 47
Cr.			
By Prizes for Live Stock	728 50		
" " Field Products	130 50		
" " Dairy "	60 00		
" " Horticultural Products	75 75		
" " Agricultural Implements	118 00		
" " Arts and Manufactures	288 75		
" " Hoeing Turnips	35 00		
	1436 50		
Unpaid	60 25		
		1376 25	
" Prizes of previous year		66 92	
" Legislative Grant to Township Societies		280 00	
" Agricultural Publications		54 60	
" Working Expenses		489 56	
			2267 33
Balance in hand			275 14

Note.—The nineteenth Annual Exhibition fully sustained the high character of its predecessors. In the turnip hoeing match there were sixty entered as competitors.

Pickering.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		128 68	
" 315 Members' Subscriptions		372 50	
" Admissions to Show		345 80	
" Legislative Grant		140 00	
" Proceeds rent of grounds, booths, &c		46 00	
			1032 98
Cr.			
By Prizes for Live Stock	359 50		
" " Field Products	49 00		
" " Dairy "	14 00		
" " Horticultural Products	33 00		
" " Agricultural Implements	40 25		
" " Arts and Manufactures	124 00		
" " Growing Crops	30 00		
" " Turnip Hoeing Match	20 00		
	669 75		
Unpaid	46 00		
		623 75	
" Prizes of previous year		75 00	
" Preparing Show Grounds		132 00	
" Working Expenses		152 82	
			983 57
Balance in hand			49 41

Whitby and East Whitby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		50 78	
" 329 Members' Subscriptions		329 00	
" Admissions to Show		215 23	
" Legislative Grant		140 00	
" Special Prizes		57 00	
			792 01
Cr.			
By Prizes for Live Stock	270 75		
" " Field Products	65 50		
" " Dairy "	21 50		
" " Horticultural Products	20 00		
" " Agricultural Implements	43 50		
" " Arts and Manufactures	151 75		
" " Growing Crops	24 00		
" " Reaping Match	100 00		
	697 00		
Unpaid	4 00		
		693 00	
" Preparing Show Grounds		24 85	
" Working Expenses		43 25	
			761 10
Balance in hand			30 91

OTTAWA.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		32 46	
" 246 Members' Subscriptions		881 00	
" Admissions to Show		1108 00	
" Legislative Grant		350 00	
" Municipal Grants		850 00	
" Co. Ottawa Agricultural Society		100 00	
" Rents of Booths, Peddlers' Licenses, &c		370 50	
" Miscellaneous Receipts		82 50	
			3774 46
Cr.			
By Prizes for Live Stock	1186 00		
" " Field Products	155 00		
" " Dairy "	60 00		
" " Horticultural Products	204 00		
" " Agricultural Implements	180 00		
" " Arts and Manufactures	241 18		
" " Extras	37 50		
	2063 68		
Unpaid	37 50		
		2026 18	
" Preparing Show Grounds, Lumber, &c		975 02	
" Working Expenses, including remuneration to Secretary and Treasurer, Assistants, Gate-keepers, Printing, Advertising, &c		747 46	
			3748 66
Balance in hand			25 80

OXFORD, NORTH.

	$ cts.	$ cts.	$ cts.
Dr.			
" 298 Members' Subscriptions		302 00	
" Admissions to Show		315 00	
" Legislative Grant		700 00	
" Proceeds Rent of Booths		25 00	
			1342 00
Cr.			
By Balance due Treasurer		112 47	
" Prizes for Live Stock	397 80		
" " Field Products	92 75		
" " Dairy "	36 50		
" " Horticultural Products	24 00		
" " Agricultural Implements	32 50		
" " Arts and Manufactures	78 25		
		661 80	
" Legislative Grant to Township Societies		418 41	
" Preparing Show Grounds		22 83	
" Working Expenses		178 27	
			1393 78
Balance due Treasurer			51 78

REPORT.

In accordance with the requirements of the Statute, your Directors beg to lay before you a brief statement of the proceedings of the year now brought to a close, and respectfully offer a few suggestions for the consideration of our successors in office, for future action.

The Exhibition of seed grain in the spring was quite successful. Entries were more numerous, and the desire to secure choice samples, either by purchase or exchange, was greater than usual, which to us was an evidence of its utility, and gives encouragement for its continuance, and, if possible, further extension. In the number and value of the stallions exhibited, your Directors were satisfied that it was equal to any former exhibition; but the show of bulls was so small that we would recommend the discontinuance of offering prizes in the spring, and include them in the list for the Fall Exhibition instead, for the following reasons;—1st. They cannot be brought from a distance on account of bad roads. 2nd. Exhibitors cannot be induced to "fit" them for show purposes at that season of the year. And 3rd. It leaves the Fall Exhibition incomplete without them.

With reference to the Autumn Exhibition, we may safely say that as a whole it was the most successful yet held by this Society. In proof thereof we may state that nearly all the prizes offered on the list were awarded, which sum in the aggregate was larger than at any time previous. It is true that some departments were not as well represented as we have seen them, but in others we may claim greater excellence. The attendance of visitors was larger than on any former occasion, as may be seen by the receipts at the gate amounting to the handsome sum of $315, at 10 cent tickets, while the year previous, with 15 cent tickets, only $271 were realised. Herdsmen's tickets also were given, which while it removed the grievance complained of in 1870, it added to the number admitted free. The number of members was larger than the year before, and it is safe to say that not less than 5000 persons visited the Exhibition. The treasurer's report will show you that the debt has been reduced from $112·47 to $51·78, which sum is now due the Treasurer.

We may congratulate the Society for the success of its operations during the past year under the controlling circumstances, but the difficulties that presented themselves to us and to our predecessors for many years past still exist. There is no lack of enthusiasm or desire on the part of the community to sustain Agricultural Associations, and we are glad to notice that a deeper interest is manifest, but there is a want of concentrated and united effort to secure results similar to the success attained at London, Hamilton, or Guelph. We believe that more money is annually contributed by the people of Oxford for this purpose than by any other county in this province, but the actual good accomplished is not at all commensur-

ate with the efforts put forth. There are no less than eleven agricultural organizations in this County, embracing a membership of about 3000, who contribute the sum of $3000, to which is added $1400 from Government Grant, and not less than $1600 from gate fees, making a total sum of $6000, exclusive of special prizes given by liberal friends, and a still larger sum for ploughing matches not included in the above. Sixteen days are occupied with the Fall Exhibitions alone, and upwards of one hundred directors engaged on an average of six days per annum to distribute 80 per cent of the sum named, the other 20 per cent being required to pay working expenses; and with what results we may ask? The prizes are too small to induce competitors to run much risk, and the consequence is only a medium class of articles or animals are shown, and very frequently prizes are obtained by animals unworthy a place in the show ground. It may do to pamper to the prejudices of parties for local privileges or *some perquisites*, but we are confident that neither intelligence nor agricultural advancement can be acquired by the diffuse system so long continued in this county.

We are assured that very many leading agriculturists of this County hold the same opinion as ourselves, but are equally at a loss to suggest a remedy. Overtures have been made to amalgamate but without results of a permanent character. It would be a bold step for this Society to follow the example set by Guelph, but we see no reason why it should not be sustained. It is evident that something must be done or retrogression will ensue. Our present ground is too small, the buildings inadequate, and the exposure of the property to the destruction of mischievous boys is intolerable.

* * * * *

Blandford.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		23 89	
" 193 Members' Subscriptions		201 00	
" Admissions to Show		49 77	
" Legislative Grant		83 75	
" Treasurer Wilmot Society		392 00	
" Special Subscriptions		21 00	
			771 41
Cr.			
By Prizes for Live Stock	380 75		
" " Field Products	53 75		
" " Dairy "	31 25		
" " Horticultural Products	32 50		
" " Agricultural Implements	53 00		
" " Arts and Manufactures	63 50		
		614 75	
" Preparing Show Rooms		19 50	
" Working Expenses		79 24	
			71349
Balance in hand			57 92

Blenheim.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		232 00	
" 253 Members' Subscriptions		290 50	
" Admissions to Show		141 14	
" Legislative Grant		120 00	
" Spring Fair		34 25	
" Miscellaneous Receipts		49 80	
			867 69
Cr.			
By Prizes for Live Stock	287 25		
" " Field Products	51 50		
" " Dairy "	15 00		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Horticultural Products	18 50		
" " Agricultural Implements	30 00		
" " Arts and Manufactures	27 75		
" " Growing Crops	10 00		
		440 00	
" Prizes of last year		17 50	
" Preparing Show Grounds		28 13	
" Working Expenses		122 91	
			608 54
Balance in hand			259 15

REPORT.

The Spring Fair was not only a success, but in advance of any in former years. There was an excellent show of horses, and a large quantity of seed grain of a very fine sample.

The Fall Exhibition, in most respects was all that could be desired. There was a large number of people present, as our receipts at the gates will sufficiently prove, being the large amount of $141. There was a large show of excellent horses, stock, sheep, grain and poultry. The ladies' department, however, was scarcely up to our expectations. The number of entries was somewhat curtailed by various causes—such as the Western Fair being held the same time as our exhibition; the excessive dry weather had also a tendency to lessen the number of entries in roots, &c. Also Mr. Watson, one of our principal manufacturers of agricultural implements; he exhibited a number of articles, but made no entries. A pleasing feature in connection with the exhibition was the examination of fields of turnips. There were nine entries, of these the best acre producing about 22 tons, which, considering the drought, was a fine yield.

* * * *

Nissouri, East.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		7 35	
" 72 Members' Subscriptions		81 00	
" Legislative Grant		32 34	
			120 69
Cr.			
" Prizes for Live Stock	89 50		
" " Field Products	15 75		
" " Dairy "	2 50		
" " Horticultural Products	2 25		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	4 50		
		117 50	
" Working Expenses		17 25	
			134 75
Balance due Treasurer			14 06

Zorra, East.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 18	
" 182 Members' Subscriptions		234 25	
" Admissions to Show		6 05	
" Legislative Grant		100 94	
			361 42
Cr.			
By Prizes for Live Stock	211 50		
" " Field Products	23 00		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Dairy Products	10 50		
" " Horticultural Products	5 00		
" " Agricultural Implements	7 00		
" " Arts and Manufactures	24 00		
	281 00		
Unpaid	48 0		
		233 00	
" Preparing Show Grounds		25 50	
" Working Expenses		48 20	
			306 70
Balance in hand			54 72

REPORT.

* * * * *

The exhibition was most encouraging. The increase of the prize list, the open competition, and the proximity of the place of the exhibition to Blandford, Wilmot, North and South-East Hope drew forth an amount of entries in every class, more especially in cattle and horses, far ahead of any annual exhibition ever held by this Society. The number of spectators was also greatly increased. Tavistock that day presented a lively scene, the German element of the population turning out *en masse* to witness and profit by the agricultural rivalry there displayed. The Directors beg to state that when the proposal to hold the exhibition at Tavistock was agreed to, it was not contemplated by them to hold it there from year to year; but seeing the success of the experiment, and the expense incurred by the friends in Tavistock in erecting a hall for exhibition purposes, they would respectfully suggest the desirability of again holding it there. They make this suggestion in the hope that the Tavistock friends will display the same public spirit, zeal, and liberality in its support which distinguished them last year.

The same section of the Act which requires the Directors to present at the annual meeting a report of their proceedings during the year, also requires them to make such remarks and suggestions on the agriculture, &c., of the Township as they are enabled to offer. In this branch of the report they have but little to say. They, however, would humbly venture the remark that East Zorra is keeping pace in the country's general agricultural progress. It does not simply follow the lead, but is side by side with any other section of our fair and thriving province in the adoption of any improvement in agriculture or new agricultural enterprise. "Old School" methods of farming are rarely followed by its yeomanry. Rotation of crops, deep tillage, draining and manuring are the order of the day with them, and hence E. Zorra residents are a thriving agricultural community. Land to purchase or to rent in the Township is soon picked up, and its value is yearly on the increase: and if the projected railway between Woodstock and Stratford is carried through its value will be further enhanced, and a location in the Township become more and more a desirable object.

In common with the entire Province, E. Zorra has this year enjoyed great agricultural prosperity. A bountiful harvest has crowned the labours of the husbandman. Cheese dairying, however (a branch of farming into which many of its residents have entered), has not been quite so lucrative this year as formerly. Owing to the protracted dry weather, pastures failed earlier, and the yield of milk materially fell off. This together with the comparatively low price got for the article, caused by the extra large make of cheese in the mother country, will probably tend to cool the ardour of the farmers towards its manufacture, and make some go off from pursuing it. This, we think, will be greatly to err. Cheese manufacture, like cattle feeding, sheep farming, cereal crop raising, or any other branch of farming, will have its ups and downs, its profitable and not so profitable seasons: but we have no doubt that perseverance in it will show that on an average of years cheese-making is one of the most profitable branches of agricultural industry.

Zorra, West.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		60 10	
" 156 Members' Subscriptions		165 75	
" Admissions to Show		15 55	
" Legislative Grant		81 34	
" Municipal Grant		20 00	
			342 74
Cr.			
By Prizes for Live Stock	108 25		
" " Field Products	34 25		
" " Dairy "	14 50		
" " Horticultural Products	3 75		
" " Agricultural Implements	14 00		
" " Arts and Manufactures	17 25		
" " Growing Crops	24 50		
" " Ploughing Match	20 00		
		236 50	
" Prize of Last Year		1 00	
" Preparing Show Grounds		8 00	
" Working Expenses		20 21	
			265 71
Balance in hand			77 03

OXFORD, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		33 78	
" 97 Members' Subscriptions		97 00	
" Admissions to Show		341 77	
" Legislative Grant		700 00	
" Premiums Ingersoll Society		600 00	
" Proceeds Sale of Live Stock		106 20	
" Rent of Stands, &c.		67 25	
" E. V. Bodwell, M P., Donation		20 00	
			1966 00
Cr.			
By Prizes for Live Stock	548 75		
" " Field Products	95 00		
" " Dairy "	49 50		
" " Horticultural Products	42 25		
" " Agricultural Implements	79 25		
" " Arts and Manufactures	99 75		
		914 50	
" Legislative Grant to Township Societies		420 00	
" Ingersoll N. and W. Oxford Society		477 52	
" Canadian Dairymen's Association		18 75	
" Working Expenses		86 07	
			1916 84
Balance in hand			49 16

REPORT.

The South Oxford and Ingersoll, N. and W. Oxford Agricultural Societies held a Union Exhibition, which was very successful, the number of entries being about two thousand. Th

amount of money offered was above two thousand dollars; of that amount nine hundred and fourteen $\frac{50}{100}$ dollars were awarded.

In addition to the general Exhibition, there was a special department for cheese, to which the Canadian Dairymen's Association contributed a large share of the funds offered in premiums. In this department, fourteen prizes were offered for six factory cheese, the first prize being one hundred dollars; fifty-two exhibitors competed. The display of cheese was very superior, giving satisfactory evidence that Ontario is fast advancing in this department of industry, and South Oxford being foremost.

The proceeds of the general Exhibition went to the Ingersoll N. and W. Oxford Society, also all prize money not awarded, for which they paid all the expenses of the Exhibition.

The County of Oxford is steadily increasing in wealth and industry. Farming lands are probably as high in price as in any county in Ontario. It must, therefore, be assumed that the land is good.

* * * * *

Dereham.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		15 45	
" 232 Members' Subscriptions		241 00	
" Admissions to Show		169 32	
" Legislative Grant		74 80	
			500 57
Cr.			
By Prizes for Live Stock	173 00		
" " Field Products	31 00		
" " Dairy "	23 00		
" " Horticultural Products	18 00		
" " Agricultural Implements	36 00		
" " Arts and Manufactures	26 00		
		307 00	
" Preparing Show Grounds		53 14	
" Working Expenses		141 73	
			501 87
Balance due Treasurer			1 30

Norwich, North.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		125 79	
" Members' Subscriptions		309 00	
" Admissions to Show		202 00	
" Legislative Grant		99 69	
			736 48
Cr.			
By Prizes for Live Stock	208 00		
" " Field Products	41 00		
" " Dairy "	18 00		
" " Horticultural Products	31 00		
" " Agricultural Implements	35 25		
" " Arts and Manufactures	45 75		
" " Extras	14 25		
		393 25	
" Preparing Show Grounds		125 00	
" Working Expenses		203 52	
			721 77
Balance in hand			14 71

Norwich, South.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		38 43	
" 361 Members' Subscriptions		438 25	
" Admissions to Show		285 50	
" Legislative Grant		89 18	
" Proceeds Rent of Refreshment Room and Stables		80 00	
			931 36
Cr.			
By Prizes for Live Stock	357 25		
" Field Products	43 50		
" " Dairy "	29 25		
" " Horticultural Products	15 50		
" " Agricultural Implements	29 50		
" " Arts and Manufactures	92 75		
		567 75	
" Preparing Show Grounds		24 50	
" Working Expenses		162 23	
			754 48
Balance in hand			176 88

REPORT.

Your Directors, in this their annual report, beg to call your attention to the very satisfactory condition of the affairs of your Society, as shown by the Treasurer's report.

* * * * *

You will also see by the large sum taken at the gates during the days of Show from non-members, viz.: $285.50, the interest taken by the general public in the South Norwich Show, especially when the very unfavourable state of the weather during the last day is taken into consideration.

The list of members is also steadily increasing every year, there being an increase last year over the previous one by 86, which is very encouraging.

The quantity and quality of stock shown were also in excess of any previous year, more particularly in horses and cattle, the Directors' Special Prize having no doubt helped to increase the latter.

The sheep also were numerous and of good quality. The hogs shown were not so large in number, but of extra quality. All other departments were well filled and very creditable to the township.

* * * * *

There is no doubt but the success of the Society to a considerable extent must be credited to the spacious grounds and buildings, which are considered at the present time the best in the county, and call forth the surprise and congratulation of all our visiting friends.

* * * * *

There are also other matters of importance which if acted upon would tend very materially to the success of the Society, and advance the agricultural and mechanical interests of the township, and to which your Directors beg to call your attention. One of which is, to have a ploughing match in connection with your fall show. The lack of interest in this, one of the most important branches of agriculture, being very great, and to which the attention of the farmer ought to be called by the Society, and the improvement of which ought to be encouraged in every possible way.

Another matter which ought to receive your attention is, the offering of a good prize to the best conducted farm in the township. This would stimulate farmers to be more thorough and tidy, and cause them to take a deeper interest in their surroundings, and instead of being anxious to acquire more land would be the means of inducing them to raise larger crops on the land they now possess.

The next and not less important matter to which we beg to call your attention, is to the forming of what is known as farmers' clubs. These clubs may be conducted in various ways:

such as having one general place of meeting, say once or twice a month. Another mode is, for the neighbouring farmers in different localities to meet at each other's houses and at these meetings argue and discuss the different modes of farming, stock-raising, cheese manufacture, &c., &c. In this way a large amount of information can be gathered from one another, and also be the means of spending the long winter evenings to good advantage and profit.

There is also another matter which we cannot allow to pass without calling your attention to it, and that is the lack of enterprize displayed by the farmers in this township in not giving more attention to the raising of thoroughbred stock of all kinds. This deficiency is plain to be seen when we refer to the prizes awarded to this class of stock by our society, nine-tenths of our said prize money going to gentlemen in the adjoining municipalities. It will only require a very small amount of experience to convince any of our farmers of the benefits to be derived by such enterprize.

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Oxford, North and West.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		174 75	
" 394 Members' Subscriptions		394 00	
" Admissions to Show (from County Society)		341 77	
" Legislative Grant		114 00	
" Borrowed		106 00	
" Proceeds Sale of Land		112 50	
" Miscellaneous Receipts		158 25	
			1401 27
Cr.			
By Prizes (paid County Society's share)		600 00	
" Preparing Show Grounds		37 22	
" Purchase of "		278 70	
" Paid Money, borrowed		203 67	
" Working Expenses		213 13	
			1332 72
Balance in hand			68 55

Oxford, East.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		57 02	
" 135 Members' Subscriptions		155 00	
" Admissions to Show		10 70	
" Legislative Grant		43 21	
" Proceeds Sale of Live Stock		187 00	
			452 93
Cr.			
By Prizes for Live Stock	91 50		
" " Field Products	16 75		
" " Dairy "	16 50		
" " Horticultural Products	3 75		
" " Arts and Manufactures	29 50		
		158 00	
" Paid Note		225 00	
" Agricultural Publications		4 50	
" Working Expenses		65 31	
			452 81
Balance in hand			0 12

PEEL.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		1076 70	
" 423 Members' Subscriptions		433 00	
" Admissions to Show		610 34	
" Legislative Grant		700 00	
" Municipal Grants		189 00	
" Proceeds Rent of Booths, &c.		79 00	
" Miscellaneous Receipts		35 50	
			3123 54
Cr.			
By Prizes for Live Stock	633 25		
" " Field Products	126 00		
" " Dairy "	57 50		
" " Horticultural Products	64 50		
" " Agricultural Implements	146 00		
" " Arts and Manufactures	167 75		
	1195 00		
Unpaid	121 25		
		1073 75	
" Prizes of previous year		104 75	
" Legislative Grant to Township Societies		280 00	
" Preparing Show Grounds		360 48	
" Purchase of Exhibition Ground		500 00	
" Working Expenses		332 79	
			2651 77
Balance in hand			471 77

REPORT.

The Directors of the County of Peel Agricultural Society, in submitting this their Annual Report for the year 1871, feel that they have reason to congratulate the members on the excellent financial condition in which the Society has been left at the close of the year, the Treasurer's books showing a considerable balance to the credit of the society, after allowing for all matured liabilities.

The Society's Exhibition ground having long since been found too small for the purposes of the Fall Exhibitions of the Society, and the lease thereof being about to expire, your Directors considered it advisable to take advantage of the opportunity afforded by the sale of the estate of the late John Elliott, and purchased from the Trustees of that estate a tract of seven acres, which included the former Exhibition ground.

* * * * *

The Spring Fair of the Society, held in Brampton, on the 26th day of April last, was an unusually successful one. An increase in the amount of the premiums offered had the effect of attracting a much larger number of exhibitors, with a better class of stock, the quality of the stock exhibited being far above the average of former fairs. The sum of $176 was awarded in premiums, being forty dollars more than at last year's fair.

The Fall Exhibition, on the second and third days of October, was not considered as successful as that of 1870, although a considerable improvement was noticeable in some of the classes exhibited, especially in that of live stock. Your Directors were glad to notice that exhibitors of imported stocks of cattle and pigs are becoming more numerous every year, a fact, no doubt, owing to the influence exercised by Agricultural Societies in causing a keen competition for excellence in stock breeding. The show of pigs was particularly good, several members of the society having imported extensively during the past season.

Owing, probably, to the dryness of the preceding season, the exhibitors of cereals were not numerous, but the samples shown were excellent. In roots and vegetables a marked im-

provement was observed. Owing to the threatening state of the weather during the Exhibition, the number of visitors was not as large as was expected.

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Toronto.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		148 10	
" 205 Members' Subscriptions		218 00	
" Admissions to Show		78 40	
" Legislative Grant		140 00	
" Municipal Grant		100 00	
" Miscellaneous Receipts		11 40	
			695 90
Cr.			
By Prizes for Live Stock	198 50		
" " Field Products	57 00		
" " Dairy "	17 00		
" " Horticultural Products	34 00		
" " Agricultural Implements	51 00		
" " Arts and Manufactures	81 50		
	439 00		
Unpaid	37 50		
		401 50	
" Working Expenses		104 02	
			505 52
Balance in hand			190 38

Toronto Gore.

Dr.	$ cts.	$ cts.	$ cts
To 114 Members' Subscriptions		195 00	
" Admissions to Show		57 12	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
" Borrowed		60 00	
" Special Prizes		127 00	
			599 12
Cr.			
By Balance due Treasurer		9 87	
By Prizes for Live Stock	251 25		
" " Field Products	77 50		
" " Dairy "	16 00		
" " Horticultural Products	23 50		
" " Agricultural Implements	38 50		
" " Arts and Manufactures	56 50		
	463 25		
Unpaid	16 00		
		447 25	
" Preparing Show Grounds		68 00	
" Working Expenses		52 36	
			577 48
" Balance in hand			21 64

PERTH, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		282 46	
" 249 Members' Subscriptions		280 60	
" Admissions to Show		370 80	
" Legislative Grant		700 00	
" Municipal Grant		150 00	
" Sale of Land		217 76	
" Proceeds Sale of Seeds		149 83	
" Donations		104 00	
" Taxes refunded		140 00	
			2395 45
Cr.			
By Prizes for Live Stock	413 00		
" " Field Products	196 00		
" " Dairy "	16 50		
" " Horticultural Products	50 50		
" " Agricultural Implements	57 50		
" " Arts and Manufactures	63 50		
	797 00		
" " Unpaid	89 00		
		708 00	
" Legislative Grant to Township Societies		474 34	
" Preparing Show Grounds		471 05	
" Purchase of Grounds		248 49	
" Working Expenses		274 25	
			2176 13
Balance in hand			219 32

Elma.

Cr.	$ cts.	$ cts.	$ cts.
To Balance in hand		51 66	
" 139 Members' Subscriptions		139 00	
" Admissions to Show		9 37	
" Legislative Grant		121 57	
" Municipal Grant		20 00	
" Donation, J. Redford, M.P.		20 00	
			361 60
By Prizes for Live Stock	110 00		
" Field Products	18 50		
" Dairy "	7 50		
" " Horticultural Products	8 50		
" " Agricultural Implements	13 75		
" " Arts and Manufactures	24 25		
		182 50	
" Preparing Show Grounds		14 00	
" Working Expenses		60 95	
			257 45
" Balance in hand			104 15

Logan.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		93 90	
" 89 Members' Subscriptions		91 00	
" Admissions to Show		12 76	

Dr.	$ cts.	$ cts.	$ cts.
By Legislative Grant		75 19	
" Municipal Grant		20 00	
" Donation—J. Redford, M.P.		20 00	
			312 85
Cr.			
By Prizes for Live Stock	87 75		
" " Field Products	26 25		
" " Dairy "	7 50		
" " Horticultural Products	12 50		
" " Agricultural Implements	11 50		
" " Arts and Manufactures	30 25		
		175 75	
" Prizes for past year		6 00	
" Working Expenses		58 55	
			240 30
Balance in hand			72 55

Note.—Notwithstanding the great dryness of the season, the Fall Show was very successful, and the crops in this level Township were quite up to an average. The Directors recommend the extension of ditching and under-draining as essential conditions of all future improvements, and the establishment of Dairy Factories.

Mornington.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		3 05	
" Members' Subscriptions		106 00	
" Admissions to Show		16 60	
" Legislative Grant		117 58	
" Donation—J. Redford, M.P.		20 00	
			263 23
Cr.			
By Prizes for Live Stock	109 00		
" " Field Products	31 00		
" " Dairy "	9 00		
" " Horticultural Products	1 25		
" " Agricultural Implements	10 50		
" " Arts and Manufactures	25 25		
		186 00	
" Working Expenses		52 38	
			238 38
Balance in hand			24 85

Wallace & Elma.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		33 26	
" 154 Members' Subscriptions		174 87	
" Admissions to Show		134 00	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
" Miscellaneous Receipts		43 00	
			545 13
Cr.			
By Prizes for Live Stock	132 50		
" " Field Products	32 75		
" " Dairy "	12 75		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Horticultural Products	23 50		
" " Agricultural Implements	20 00		
" " Arts and Manufactures	12 75		
" " Ploughing Match	21 00		
	255 25		
Unpaid	26 12		
		229 13	
" Prizes of last year		22 00	
" Preparing Show Grounds		177 00	
" Working Expenses		117 00	
			545 13

PERTH, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		379 80	
" 279 Members' Subscriptions		290 00	
" Admissions to Show		263 44	
" Legislative Grant		700 00	
" Municipal Grants		231 75	
			1864 99
Cr.			
By Prizes for Live Stock	269 25		
" " Field Products	46 85		
" " Dairy "	12 75		
" " Horticultural Products	29 90		
" " Agricultural Implements	42 00		
" " Arts and Manufactures	59 95		
	460 70		
Unpaid	56 95		
		403 75	
" Prizes of past year		75 45	
" Legislative Grant to Township Societies		576 12	
" Preparing Show Grounds		205 37	
" Printing		41 50	
" Working Expenses		199 95	
			1502 14
Balance in hand			362 85

REPORT.

* * * * *

Your Directors have held two Exhibitions during the past year—one in the spring, mainly for animals for breeding purposes such as bulls and stallions. In the latter class a great and important improvement was noticeable over former years, there being a number of really good horses on the ground in heavy draft, and horses for general purposes.

As regards that noble animal, the thorough-bred horse, you have heretofore offered prizes, but from the uncertainty of pedigree, offence and other reasons, although the animals shown were deserving of much consideration, your Directors were of opinion they were not of a sufficiently decided character for the improvement of our roadster horses to continue the list for the past year.

The great difficulty and expense of procuring a stud book at present will, no doubt, prevent for some time the renewal of the prizes offered in that class, no such book being in possession of the Provincial Agricultural Association.

The other Exhibition was held in the Fall, and partook more of a general character, and was for the exhibition of all our industrial productions, so far as the means in the control of your Directors would permit, which we consider was very successful.

This being only the fourth Fall Exhibition since the organization of your Society, from the interest manifested, we have every reason to expect, in a few years, your Fall Show will be second to none in the Province of the kind. Looking to this end, your Directors ask for renewed energy in all the members for that purpose.

Your Directors have experienced, and believe, that your Fall Exhibitions will be attended with trouble, difficulties and annoyance financially and otherwise, until a suitable Hall is built on the grounds, sufficient in size to accommodate the domestic manufactures—ladies' work, grain, dairy and other articles that require shelter and safe keeping, and we urgently recommend our successors to take the necessary steps to build a suitable Hall, and have the same completed in time for your next annual Fall Exhibition, being certain that a Hall on the grounds would pay for itself in a comparatively short time, and enable your Directors to manage the Exhibitions with more economy and efficiency.

* * * * *

We would direct the attention of the farmers of this locality to the necessity of continuing in that profitable work—the improvement of their farm stock—by selecting the best animals for breeding purposes, improved stock always commanding ready sale and good prices. Farmers will also find it greatly to their advantage, considering the bleak nature of our climate in winter, to erect comfortable buildings for their stock. It becomes, therefore, of more importance to secure stock of such value as will pay the necessary expense and trouble of keeping them comfortable and in thriving condition through our long and severe winters.

* * * * *

Blanshard.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		0 88	
" Members' Subscriptions		163 00	
" Admissions to Show		11 85	
" Legislative Grant		140 00	
" Municipal Grant		30 00	
" Miscellaneous Receipts		3 82	
			349 55
Cr.			
By Prizes for Live Stock	120 75		
" " Field Products	27 00		
" " Dairy "	9 00		
" " Horticultural Products	7 50		
" " Agricultural Implements	21 00		
" " Arts and Manufactures	38 50		
" " Growing Crops	9 00		
	232 75		
Unpaid	8 25		
		224 50	
" Working Expenses		52 56	
			277 06
Balance in hand			72 49

Fallbrook.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		74 52	
" 97 Members' Subscriptions		97 50	
" Admissions to Show		26 00	

Dr.	$ cts.	$ cts.	$ cts.
To Legislative Grant		136 84	
" Municipal Grant		30 00	
			364 86
Cr.			
By Prizes for Live Stock	111 00		
" " Field Products	14 25		
" " Dairy "	5 00		
" " Horticultural Products	10 25		
" " Agricultural Implements	8 25		
" " Arts and Manufactures	17 50		
		166 25	
By Prizes of last year		28 00	
" Preparing Show Grounds		56 80	
" Printing, &c., for two years		21 82	
" Working Expenses		55 40	
			328 27
Balance in hand			36 59

Hibbert.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		84 76	
" Members Subscription		139 00	
" Admissions to Show		15 20	
" Legislative Grant		135 78	
" Municipal Grants		35 00	
" Miscellaneous Receipts		13 50	
			423 24
Cr.			
By Prizes for Live Stock	179 75		
" " Field Products	19 20		
" " Dairy "	10 75		
" " Horticultural Products	12 95		
" " Agricultural Implements	8 00		
" " Arts and Manufactures	35 00		
	265 65		
Unpaid	19 20		
		246 45	
" Prizes of Previous Year		12 10	
" Working Expenses		59 06	
			317 61
Balance in hand			105 63

PETERBORO', EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		163 45	
" 80 Members' Subscriptions		80 00	
" Admission to Show		80 65	
" Legislative Grant		700 00	
" Grant from Dummer and Douro Society		100 00	
" Miscellaneous Receipts		29 60	
			1153 70

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	259 50		
" " Field Products	53 00		
" " Dairy "	13 50		
" " Horticultural Products	19 28		
" " Agricultural Implements	19 25		
" " Arts and Manufactures	49 25		
" " Ploughing Match	96 30		
	510 08		
Unpaid	141 08		
		369 00	
" Prizes of previous Year		13 00	
" Legislative Grant to Township Societies		420 00	
" Implements at Ploughing Match		53 00	
Premium at Horse Show		20 00	
" Working Expenses		215 29	
			109 29
Balance in hand			63 41

REPORT.

It is gratifying to be enabled to report so satisfactory a state of our finances, notwithstanding the extra appropriations for a horse fair and towards the annual ploughing match.

The membership of the Society, although not largely, still steadily increases. From 65 in 1869, and 76 in 1870, the membership numbers 80 for the past year. And your Directors have every reason to hope that, from the general interest taken in the Society throughout the Riding, and the honourable rivalry stimulated by our annual exhibitions, this increase will be more than maintained in the future.

It is a matter of deep thankfulness to the "Giver of all Good," that the labours of the farmer have, on the whole, been abundantly rewarded in the results of the past harvest. Fall wheat was a large yield, and an excellent sample. Of other cereals there was a fair average crop. Hay, on account of the dry, cold spring, was exceedingly light. And potatoes, though good in quality, did not equal in quantity that of the preceding year.

Your Directors have much pleasure in congratulating the members on the marked signs of progress in the Riding, as evinced by the interest taken in the importation and raising of improved stock, and from the increased introduction of labour-saving machines.

The Society held a Show for entire horses last spring at Keene. The premiums offered were liberal, but they failed to attract the class of horses your Directors had hoped to see exhibited. Only a second premium was awarded, none of the five entered being deemed worthy by the judges of a first.

The Fourth Annual Exhibition was held at Warsaw, on the 5th and 6th of October last, and proved very successful. The local Society provided ample accommodation in the new hall lately erected, for the exhibition of grain, roots, fruits, dairy produce and domestic manufactures, &c.; but the want of convenient grounds for the exhibition of stock was severely felt. The weather was favourable, and the entries numerous, although not quite equal to the preceding year, being 657 as against 719 at Norwood.

The show of sheep and pigs was specially excellent. The display of grains, potatoes and butter was large, and quality good, indeed many of the samples were not inferior to those exhibited at our Provincial Fair.

The annual ploughing match was held on the farm of T. Blezard, Esq., on the 26th of October last, and was witnessed by a large number of spectators. The competition was divided into two classes, "Men and Boys." 19 entries were made, and the premiums offered amounted to the value of $96·30. From the previous continued drought the ground was not in the most favourable condition, but competent judges pronounced the ploughing to be the best ever done at any of the Society's matches

The railway question, which has been agitating the country for the past few years, your Directors cherish the hope will, at no distant date, culminate in the construction of railway

communication with some of our principal seats of commerce, and thereby give our farmers an outlet to the best markets at all seasons of the year for their surplus stock and produce, besides increasing the value of property, and presenting inducements to capitalists to settle amongst us and establish some of those numerous manufactures for which our Riding possesses ample facilities, and thus add to our wealth and population.

In conclusion, your Directors express the hope that our farmers generally will see it to be their interest to become members of your Society, in not only receiving a share of the benefits to be derived therefrom, but also thereby seconding the liberality of our legislature, in the promotion and encouragement of agriculture, on which so much depends.—our success and prosperity as individuals and as a country; and whereby our Canadian farmers will take a first rank among the agriculturists of the world for intelligence, skill and success.

Asphodel & Belmont.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		57 85	
" 183 Members' Subscriptions		183 00	
" Admissions to Show		61 15	
" Legislative Grant		130 28	
" Proceeds Sale of Seeds		514 46	
			946 74
Cr.			
By Prizes for Live Stock	67 25		
" " Field Products	21 28		
" " Dairy "	7 87		
" " Horticultural Products	11 02		
" " Agricultural Implements	10 25		
" " Arts and Manufactures	21 75		
		139 42	
" Preparing Show Grounds		16 12	
" Purchase of Seed		638 71	
" Paid for Band		30 00	
" Agricultural Publications		10 00	
" Interest		16 00	
" Working Expenses		50 41	
			910 66
Balance in hand			36 08

Dummer and Douro.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		24 32	
" 126 Members' Subscriptions		178 40	
" Borrowed		200 00	
" Legislative Grant		90 40	
" Municipal Grant		100 00	
" Proceeds Sale of Seed		9 39	
" Local Subscriptions		18 51	
			621 02
Cr.			
" Preparing Show Grounds		242 80	
" Purchase of Seed		162 63	
" Amount merged in Prize List		100 00	
" Working Expenses		26 84	
			532 27
Balance in hand			88 75

REPORT.

* * * * *

During the year 1871 the Society has completed an Agricultural Hall in the Village of Warsaw. This Hall is 36 by 80 feet consisting of Main Hall, 36 by 64, for the exhibition of fruit, grain, roots, vegetables, &c., &c., with Secretary's office, 16 by 32 feet. The building is pleasantly located in Western Division of the Village, the land upon which it stands being gratuitously given by Wm. Kidd, Esq. In architecture, the edifice resembles those of a similar character erected in the eleventh century The cost of the hall (furniture excepted) has been (say) $450. To procure the means for defraying this has been no small embarrassment to the Society. As will be seen by referring to statement of the finances enclosed, the Society is under obligations to the treasurer for some $200, which he loaned them to pay balance due on hall.

* * * * *

The Society having united with the Riding Society for the purposes of exhibition, there is upon this point nothing to report. However, in connection with this subject, it is observable that inducement is offered to the artist, the mechanic, the florist, the husbandman, and to the ladies, to bring the product of their skill or their labour to the exhibitions of our societies. Yet is there a large and all important class of our consumers who are in nowise interested in the success of our shows. I refer to the children, to be found in almost every house in the land, and of these chiefly those who are shut up in schools from January to July. Now to interest them, say you set apart a sum sufficient to afford a prize for the best cabinet of natural history, or the best case of insects properly preserved, labelled, &c.; or for the best collection of geological or mineralogical specimens. You would thus give a zest to the study, be a great help to many teachers and make what is (by some) considered a dry and useless study, a subject for pleasure, profit, and of some practical use.

* * * * *

Minden, Snowdon, & Stanhope.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		40 45	
" 50 Members' Subscriptions		50 00	
" 24 " " for 1872		24 00	
" Legislative Grant		35 60	
			150 05
Cr.			
By Prizes for Live Stock	38 75		
" " Field Products	8 40		
" " Dairy "	1 50		
" " Horticultural Products	5 45		
" " Arts and Manufactures	16 85		
		70 95	
" Prize of last year		1 00	
" Preparing Show Grounds		3 50	
" Purchase of Seed		40 00	
" Working Expenses		20 39	
			135 84
Balance in hand			14 21

Otonabee.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		81 00	
" 140 Members' Subscriptions		140 00	
" Admissions to Show		75 25	
" Legislative Grant		99 65	
" Proceeds Sale of Seeds and Plaster		768 79	
			1164 69

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	73 92		
" " Field Products	25 26		
" " Dairy "	10 00		
" " Horticultural Products	4 62		
" " Agricultural Implements	2 25		
" " Arts and Manufactures	16 07		
	132 12		
Unpaid	58 25		
		73 87	
" Prizes of previous Year		81 75	
" Paid money borrowed		200 00	
" Preparing Show Grounds		1 75	
" Purchase of Seed and Plaster		709 93	
" Working Expenses		29 89	
			1097 19
Balance in hand			67 50

PETERBORO' WEST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		157 61	
" 89 Members' Subscriptions		94 00	
" Admissions to Show		211 84	
" Legislative Grant		700 00	
			1163 45
Cr.			
By Prizes for Live Stock	315 00		
" " Field Products	46 50		
" " Horticultural Products	23 00		
" " Agricultural Implements	23 50		
" " Arts and Manufactures	87 50		
" " Ploughing Match	38 25		
	533 75		
Unpaid	97 00		
		436 75	
" Prizes for previous Year		32 50	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		62 22	
" Working Expenses		166 91	
			1118 38
Balance in hand			45 07

REPORT.

* * * * *

The Exhibitions of your Society have been so long at a standstill, that your Directors may be pardoned for a moment, while they enter very briefly into a comparison between the results of the past and previous years in this respect. From the following statement will be observed the marked progress which has taken place in the Exhibition of this year, as compared not only with those held since the separation of the County for Agricultural purposes, but even when compared with the last Exhibition for the whole County:—

Entries for 1867 (for whole County), 515; 1868, 476; 1869, 435; 1870, 478; and last year, 633. Number of members in 1867, 87; 1868, 81; 1869, 88; 1870, 69; and last year, 89. During the last three years every member taking a prize of $1 or upwards, has

been compelled to leave a $1 in payment of the following year's subscription, which resulted in 1869, 57; 1870, 58; and last year in 69 memberships being retained, thus proving that the prizes have gone to a larger number of persons last year than on former occasions. The receipts at the door of the Exhibition were 1867, $139; '68, $92; '69, $176, (with two band of music); '70, $119; and last year, $211. The prizes awarded were, in '68, $355; '69, $380; '70, $447; and last year, $533. Examined by classes the amount awarded is in excess, except in Durhams, which is accounted for by the fact that Mr. John Walton did not enter a single animal or article at the last Exhibition of the Society.

From these figures, it will at once be observed that not in one, but in every respect has the last Exhibition surpassed its predecessors in a manner which affords hope for the future, inasmuch as the number of exhibitors was largely in excess of that of former years.

The second annual Ploughing Match of the Society was held on the farm of James Wallis, Esq., in North Monaghan, and was also of a most satisfactory character, both as to the number of competitors as well as to the quality of the work done, due allowance being made for the very dry state of the ground. Owing to the liberality of a number of gentlemen in and about Peterborough, your Directors were enabled to offer 17 prizes, varying from $25 down to $1, and amounting in all to the handsome sum of $152, and for which there were 20 competitors.

From the experience of the past year, your Directors are more than ever convinced that this County possesses the material if only drawn forth, from which an Exhibition might be had which would be of great benefit to, as well as worthy of, the county. Your Directors are moreover convinced that the time has arrived when both Sections of the County would heartily unite in such an enterprise. Could all our Agricultural Societies only be induced to forego for *one* year their little Exhibitions, we would at once have the means to offer prizes which would secure us an Exhibition which would compare favourably with the several large Exhibitions which have been held throughout the Province during the past season.

Monaghan.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		25 06	
" 72 Members' Subscriptions		72 00	
" Admissions to Show		19 00	
" Legislative Grant		140 00	
			256 06
Cr.			
By Prizes for Live Stock	100 50		
" " Field Products	43 50		
" " Dairy "	8 00		
" " Horticultural Products	13 50		
" " Arts and Manufactures	23 50		
" " Ploughing Match	19 50		
		208 50	
" Working Expenses		34 09	
			242 59
Balance in hand			13 47

Note.—This Society continues a steady course in the promotion of agricultural improvement. At the Fall Show most of the classes were well filled, and generally of good quality.

Smith, Ennismore & N. Monaghan.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		135 60	
" 72 Members' Subscriptions		73 00	
" Legislative Grant		140 00	
" Proceeds Sale of Seeds		89 84	
			438 44

Dr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	123 50		
" " Field Products	40 50		
" " Dairy "	17 00		
" " Horticultural Products	6 25		
" " Arts and Manufactures	20 25		
	207 50		
Unpaid	2 00		
		205 50	
" Purchase of Seed		110 00	
" Working Expenses		49 25	
			364 75
Balance in hand			73 69

Peterboro' Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		229 64	
" 50 Members' Subscriptions		50 00	
" Admissions to Show		36 50	
" Legislative Grant		140 00	
" Miscellaneous Receipts		9 31	
			465 45
Cr.			
By Prizes for Fruits	11 00		
" " Plants and Flowers	24 50		
" " Vegetables	19 00		
		54 50	
" " Poultry		5 00	
" " Fine Arts and Ladies' Work		12 50	
		72 00	
" Working Expenses		82 58	
			154 58
Balance in hand			310 87

REPORT.

Owing to the peculiarly dry season it was deemed inexpedient to hold a Spring Show. The September Show was therefore the only one held in the year just passed.

The display of flowers at that Show was not what the Society would desire to see or such as a more favourable year would have ensured. While we are happy to know that more attention is yearly given to the cultivation of flowers, yet it is to be lamented that greater efforts are not made to make the Shows of the Society more attractive.

The display of fruits, particularly apples, pears and grapes, was a very encouraging feature of the last Show, the pears and grapes being shown in greater quantity, and of finer quality than ever before.

The cultivation of out-door grapes is continually receiving greater attention in this county, and it is matter of congratulation that many good grapes such as the Concord, Delaware, Adirondac, Hartford, Prolific, and some of Arnold's hybrids are successfully ripened here in an ordinarily favourable season.

We believe the Society is doing much good in establishing a correct knowledge of the capabilities of the County for fruit growing, and in creating a taste for horticultural pursuits.

PRESCOTT.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		17 45	
" 62 Members' Subscriptions		66 00	
" Admissions to Show		31 80	
" Legislative Grant		700 00	
" Miscellaneous Receipts		110 00	
			925 25
Cr.			
By Prizes for Live Stock	164 00		
" " Field Products	32 25		
" " Dairy "	42 50		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	65 25		
		308 00	
" Prizes of previous year		10 00	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		12 75	
" Refunded to E. & W. Hawkesbury Society		100 00	
" Working Expenses		36 98	
			887 73
Balance in hand			37 52

REPORT.

Your Directors, in submitting this their Annual Report, cannot overlook the fact that the Society has been steadily progressing for a number of years, and, in view of the future, feel satisfied that greater progress is in store, that all that is required to place the Society on an equality second to none in the Province, are united action and undivided efforts on the part of every member belonging to the same, to forward the interests of the whole. The improvement in horses, manifested at the Annual Show, speaks volumes for the County. At no former Exhibition held in this part of the country was such a display of first-class animals presented. In the cattle line, the same can scarcely be said; there is certainly great room for improvement, especially in the class of milch cattle. Respecting sheep and swine, some very good specimens were exhibited, shewing apparently that the farmers of the County were alive to the benefits undoubtedly obtained by the culture of pure and improved breeds in both classes. The grains and seeds exhibited were nothing inferior to former displays, manifesting that even in this Northern latitude grains and seeds can be raised of good quality, equal, if not superior, to some raised in a more Southern clime.

Of the ladies' department, a pen and-ink description would be scarcely possible. To appreciate the taste and workmanship displayed on the various articles exhibited, could only be done by personal examination;—suffice it to say, that for beauty, design, comfort, durability, and the like qualities, the articles exhibited in this department could only be surpassed by the manufacturers themselves.

In conclusion, your Directors would beg to draw attention to the fact, that, in order to improve the Society, and place the same on a permanent basis, grounds and buildings for exhibition should be acquired for the use of the Society. Suitable grounds have been presented for that purpose by James Boyd, Esq., of Vankleekhill at Vankleekhill, and the Counties Council of the United Counties of Prescott and Russell have very liberally granted the sum of four hundred dollars towards the improving of the grounds, and provision has already been made, and the contract given, for enclosing the same, but respecting the erection of a suitable building nothing conclusive has been arrived at. Your Directors would therefore recommend that proper steps be taken at once to secure the erection of permanent buildings for the use of the Society on the aforesaid grounds, and your Directors feel, if such be done, that under reasonable management, and without over extra effort, the Society will advance and prosper in a manner and at a ratio hitherto unprecedented.

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Caledonia.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		3 22	
" 21 Members' Subscriptions		92 40	
" Legislative Grant		117 15	
			212 77
Cr.			
By Amount of Prizes		197 40	
" Working Expenses		12 00	
			209 40
Balance in hand			3 37

Longueuil, E. & W. Hawkesbury.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		3 63	
" Members' Subscriptions		123 00	
" Legislative Grant		157 27	
			283 90
Cr.			
By Growing Crops		214 40	
" Working Expenses		60 00	
			274 40
Balance in hand			9 50

Plantagenet, North.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		00 16	
" Members' Subscriptions		64 00	
" Legislative Grant		81 52	
			145 68
Cr.			
By Prizes for Live Stock	32 08		
" " Field Products	8 62		
" " Dairy "	6 87		
" " Horticultural Products	9 10		
" " Agricultural Implements	1 00		
" " Arts and Manufactures	10 87		
" " Growing Crops	45 75		
		114 29	
" " Working Expenses		26 25	
			140 54
Balance in hand			5 14

Plantagenet, South.

Dr.	$ cts.	$ cts	$ cts.
To Balance in hand		19 19.	
" 26 Members' Subscriptions		52 00	
" Legislative Grant		64 00	
			135 19
Cr.			
By Prizes for Live Stock	62 40		
" " Field Products	19 65		
" " Dairy "	10 80		
" " Arts and Manufactures	10 84		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Growing Crops	13 05		
		116 74	
" Working Expenses		19 25	
			135 99
Balance due Treasurer			0 80

PRINCE EDWARD.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		63 69	
" Members' Subscriptions		265 00	
" Admissions to Show		540 17	
" Legislative Grant		700 00	
" Proceeds of Notes		650 00	
" Miscellaneous Receipts		5 00	
			2223 86
Cr.			
By Prizes for Live Stock	577 50		
" " Field Products	37 00		
" " Dairy "	21 75		
" " Horticultural Products	65 00		
" " Agricultural Implements	32 25		
" " Arts and Manufactures	58 75		
	792 25		
Unpaid	314 75		
		477 50	
" Prizes of previous year		197 42	
" Legislative Grant to Township Societies		219 18	
" Preparing Show Grounds		80 00	
" Purchase of Exhibition Grounds		130 90	
" House for Care-taker		360 00	
" Lumber		50 00	
" Working Expenses		542 63	
			2057 63
Balance in hand			166 23

Ameliasburgh.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		30 00	
" Members' Subscriptions		85 25	
" Legislative Grant		65 14	
			180 39
Cr.			
By Prizes for Live Stock	89 30		
" " Field Products	19 40		
" " Dairy "	5 60		
" " Horticultural Products	6 55		
" " Agricultural Implements	10 75		
" " Arts and Manufactures	29 05		
		160 65	

	$ cts.	$ cts.	$ cts.
Cr.			
By Working Expenses		18 19	
			178 84
Balance in hand			1 55

Hallowell.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		243 33	
" 112 Members' Subscriptions		112 00	
" Admissions to Show		22 80	
			378 13
Cr.			
By Prizes for Live Stock	87 35		
" " Field Products	19 35		
" " Dairy "	11 75		
" " Horticultural Products	14 08		
" " Agricultural Implements	2 80		
" " Arts and Manufactures	38 33		
	173 66		
Unpaid	44 98		
		128 68	
" Working Expenses		41 21	
			169 89
Balance in hand			208 24

Hillier & Hallowell.

	$ cts.	$ cts.	$ cts.
Dr.			
To 164 Members' Subscriptions		164 00	
" Admissions to Show		14 70	
			178 70
Cr.			
By Balance due Treasurer		3 09	
" Prizes for Live Stock	122 05		
" " Field Products	15 15		
" " Dairy "	11 20		
" " Horticultural Products	5 40		
" " Agricultural Implements and Carriages	17 00		
" " Arts and Manufactures	23 55		
		194 35	
" Working Expenses		41 05	
			238 49
Balance due Treasurer			59 79

Sophiasburgh.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		18 32	
" Members' Subscriptions		58 00	
" Legislative Grant		41 38	
			117 70
Cr.			
By Prizes for Live Stock	51 25		
" " Field Products	13 00		
" " Dairy "	4 25		
" " Agricultural Implements	13 25		

Cr.	$ cts.	$ cts.	$ cts
By Prizes for Arts and Manufactures	12 00		
		93 80	
Extra Premiums		16 20	
" Working Expenses		4 30	
			114 30
Balance in hand			3 40

Picton Horticultural Society.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		145 85	
" 147 Members' Subscriptions		148 00	
" Admissions to Show		142 91	
" Legislative Grant		112 66	
			549 42
Cr.			
By Prizes for Plants and Flowers	116 00		
" " Fruits	39 50		
" " Vegetables	27 25		
" " Dairy "	25 50		
" " Poultry	33 00		
" " Arts and Manufactures	86 75		
" " Miscellaneous	13 75		
		341 75	
" Preparing Exhibition Hall		15 18	
" Printing, Advertising, and Stationery		84 05	
" Working Expenses		17 23	
			458 21
Balance in hand			91 21

REPORT.

In submitting their Report for the past year, the Directors may still congratulate the Society on its financial position, although the balance now appearing at the credit side of its account is somewhat less than in former years. This is owing to several causes. The admission fees of non-members at the July exhibition was considerably less, caused by the many attractions abroad: the military review at Kingston on the same day took a large number from the County. The fall exhibition also was not as well attended as usual, the Provincial taking place at Kingston so near the same time had its effect by its greater attractions.

* * * * *

The exhibitions of the year were exceedingly attractive. The display of plants and flowers was particularly good. The fruit display was magnificent, with the exception of plums, which were an entire failure in this County last year. Vegetables were very superior. A decided improvement in the poultry class. In the ladies' department, if we compare the amount awarded in premiums with other years, will show a vast improvement in this interesting department, the amount paid being nearly double that of former years. They regret to notice a falling off in the fine arts class, with one exception.—photographs. They would recommend a special prize or prizes for this year in this class, for new subjects, more especially from young amateurs.

The following statistics, as near as possible, have been gathered, showing the export of apples from this County during the past year, viz.:

From the Port of Picton	8100	barrels.
" " Wellington	2000	"
" " Consecon	1000	"
" " Bongards and Cressy	1500	"

From the Port of Carrying Place and Rednerville.. 1600 barrels,
" " South Bay and other parts..... 900 "

In all ..... 15,100 barrels:

an increase of exports over 1869 of over 10,000 barrels. A large shipment of this fruit was made to England direct by Messrs Williams & Cooper, the result we have not yet ascertained, but believe it has been a profitable investment. The quantity of dried apples sold is about 2500 bushels, and of cider about 250 barrels from Picton alone. The revenue to the County from this single source must have exceeded $30,000 for the year 1871.

* * * * *

RENFREW, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		166 18	
" Members' Subscriptions		141 25	
" Legislative Grant		700 00	
" Miscellaneous Receipts		2 00	
			1009 43
Cr.			
By Prizes for Live Stock	85 75		
" " Field Products	24 00		
" " Dairy "	16 50		
" " Horticultural Products	9 00		
" " Agricultural Implements	50 30		
" " Arts and Manufactures	22 00		
" " Growing Crops	45 00		
" " Ploughing Match	35 00		
		287 55	
" Legislative Grant to Township Societies		210 00	
" Preparing Show Grounds		3 20	
Working Expenses		123 00	
			623 75
Balance in hand			385 68

Ross.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		178 05	
" Members' Subscriptions		52 00	
" Legislative Grant		140 00	
			370 05
Cr.			
By Prizes for Live Stock	50 25		
" " Field Products	17 95		
" " Dairy "	5 75		
" " Horticultural Products	1 50		
" " Agricultural Implements	13 00		
" " Arts and Manufactures	16 80		
" " Ploughing Match	10 00		
	115 25		
Unpaid	8 55		
		106 70	

Cr.	$ cts.	$ cts.	$ cts.
By Agricultural Publications		10 80	
" Working Expenses		36 50	
			154 00
Balance in hand			216 05

REPORT.

The Directors have to report that there has been no increase in the number of members of the Society during the past year, but there has been a material improvement in the quality of the exhibits. The number of entries has been far higher than in former years, but unfortunately the day of our Exhibition was a wet one, and not more than one-half of the exhibits entered for competition were brought upon the ground, and your Directors have to report that the Ross, Eganville and South Renfrew Exhibitions were all held on the same day, which was a great injury to ours, and caused a great deal of dissatisfaction. Your Directors would suggest that steps be taken with the different Societies, to arrange with each other as to the holding of their Exhibitions, so that not more than one Exhibition should be held within the County on the same day.

Your Directors have to report with regard to our ploughing match, that it was almost a failure, owing to the excessive drought of last season which rendered it almost impossible to plough at all. There is quite a wide margin for improvement in this department as well as other departments of the Society, and the Directors trust a hint in this respect will be taken in good part, and acted on and proved by the exhibits at the next Exhibition.

RENFREW, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		7 00	
" 133 Members' Subscriptions		147 25	
" Legislative Grant		700 00	
" Proceeds Service of Stock		46 50	
" Donations		40 00	
" Crop Entries		13 63	
			954 38
Cr.			
By Prizes for Live Stock	154 50		
" " Field Products	27 15		
" " Dairy "	20 00		
" " Horticultural Products	4 00		
" " Agricultural Implements	28 50		
" " Arts and Manufactures	25 50		
" " Growing Crops	84 00		
	343 65		
* Unclaimed	33 15		
		310 50	
" Legislative Grants to Township Societies		350 00	
" Preparing Show Ground		3 50	
" Keep of Live Stock		90 00	
" Working Expenses		150 13	
			904 13
Balance in hand			50 25

* By a rule of the Society no member can draw in prizes more than six times the amount of his subscription. On this principle the $33 15 are not simply unpaid, but revert to the funds of the Society.

REPORT.

* * * * *

The Exhibition which was held on the 3rd October would compare favourably with any of its predecessors, and was attended by a large concourse of people notwithstanding the showery nature of the day, which prevented many from getting forward their exhibits. At the close of the proceedings Albert Smallfield, Esq., of the *Renfrew Mercury*, addressed the people in an able and instructive lecture on the importance of Agriculture.

* * * * *

It is to be regretted, that while a few make strong efforts for the improvement of their stock, the greater number feel indifferent to the importance of this laudable object.

The cash donations to the Society were from J. L. McDougall, Esq., M. P., $30, Edward McGillivray, Esq., Ottawa, $10. The Hon. James Skead forwarded his usual gift of an iron plough to be competed for at the Society's Ploughing Match, but it was found inexpedient to hold a ploughing match last fall, the season being so extremely dry that the ground was not in fit state to do justice to such an operation; but your directors recommend the holding of a ploughing match as early next spring as circumstances will permit.

A bag of the "Canada Company's" prize wheat has also been received through Mr. Skead, to be disposed of for seed at the discretion of the officers of the Society for the present year, as it was too late for sowing it last fall, when it came to hand.

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The attention of the branch societies has been called to the desirability of making arrangements with each other relative to the days of holding their exhibitions, so that not more than one exhibition shall be held within the County on the same day, thereby affording the public a better opportunity of attending those exhibitions.

Your Directors feel some pleasure in being able to state, that while some of the Societies throughout the County complain of a falling off in membership—this Society is steadily increasing.

Admaston.

	$ cts.	$ cts.	$ cts.
To Balance in hand		48 54	
" 48 Members' Subscriptions		96 04	
" Admissions to Show		5 30	
" Legislative Grant		140 00	
Cr		———	289 88
By Prizes for Live Stock	50 35		
" " Field Products	17 80		
" " Dairy	7 15		
" " Agricultural Implements	9 25		
" " Arts and Manufactures	27 76		
" " Growing Crops	23 90		
	136 21		
Unpaid	2 00		
	———	134 21	
" Prizes of Past Year		2 65	
" Purchase of Seed		50 20	
" Working Expenses		27 45	
		———	214 51
Balance in hand			75 37

Grattan and Wilberforce.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		84 02	
" 55 Members' Subscriptions		55 00	
" Legislative Grant		140 00	
		———	279 02

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	53 00		
" " Field Products	25 50		
" " Dairy "	9 00		
" " Horticultural Products	1 00		
" " Agricultural Implements	20 50		
" " Arts and Manufactures	31 25		
	140 25		
Unpaid	33 50		
		106 75	
" Working Expenses		64 50	
			171 25
Balance in hand			107 77

McNab.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		49 10	
" 71 Members' Subscriptions		100 00	
" Legislative Grant		140 00	
" Miscellaneous Receipts		4 20	
			293 55
Cr.			
By Prizes for Live Stock	84 75		
" " Field Products	26 00		
" " Dairy "	17 75		
" " Horticultural Products	5 25		
" " Agricultural Implements	11 00		
" " Arts and Manufactures	33 65		
" " Growing Crops	24 50		
" " Ploughing Match	18 00		
	220 90		
Unpaid	71 80		
		149 10	
" Preparing Show Ground		20 00	
" Agricultural Publications		30 00	
" Working Expenses		54 04	
			253 14
Balance in hand			40 41

REPORT.

* * * * *

Wet seasons have been reading us a lesson on the necessity of draining, and now, two consecutive dry seasons are proclaiming aloud drain! drain!! The soils which were either naturally or artificially made early ready for sowing, have again produced crops far above the average of the season; especially is that noticeable in the culture of the potato. The importance of that root in every household has, in a manner, forced us to treat or select (which is the same thing) the land for its growth, as experience in older countries has demonstrated that all lands should be treated in order to be profitably cultivated, and that is thoroughly drained, so that the full advantage of the whole spring and summer season is secured for the growth and maturity of the crop.

We are proud to state that in the potato line we have again beat ourselves, as well as all others. Parties who visited the Provincial or Ottawa City and Central Canada Exhibi-

tions, unanimously say that McNab could have carried off the honours for potatoes easily at each of these great gatherings. These results in the cultivation of the potato have, in our opinion, been arrived at mainly by the judicious selection of new varieties, and the draining or the use of naturally drained lands. With the view, therefore, of extending these advantages, we would suggest to you the formation of a club to meet occasionally for the discussion of agricultural subjects. The payment of a very small sum by each member would purchase some journals, or works on agriculture, the reading and commenting on the contents of which would soon repay us from our farms for the time and expense connected therewith.

Our Annual Exhibition was not marked this year by such a large and lively gathering of spectators as last year, but otherwise it was a decided success; and as we have made arrangements for the use of the ground at Balmer's Island for a number of years, we anticipate more decided success still, should you continue to hold your Exhibitions there; and the advantages of having such Exhibitions regularly in the same place are too great to be lightly sacrificed.

We are sorry to state that the ploughing match was a failure, or nearly so; only four ploughs appeared. We regret that exceedingly, as observation tells us that where these are well kept up good ploughmen are raised, and without good ploughmen, there can be no good or profitable farming.

* * * * *

RUSSELL.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		1 47	
" 55 Members' Subscriptions		105 00	
" Admissions to Show		25 65	
" Legislative Grant		700 00	
" Special Donations		212 00	
" Miscellaneous Receipts		1 50	
			1045 62
Cr.			
By Prizes for Live Stock	295 40		
" " Field Products	54 95		
" " Dairy "	27 75		
" " Horticultural Products	11 70		
" " Agricultural Implements	7 00		
" " Arts and Manufactures	14 75		
" " Ploughing Match	90 00		
		501 55	
" Legislative Grant to Township Societies		419 38	
" Preparing Show Grounds		3 00	
" Working Expenses		121 00	
			1044 93
Balance in hand			69

Clarence.

[The returns from this Society are incomplete, no statement having been sent of receipts. The following is a summary of the premiums paid at the Annual Exhibition.]

Dr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	53 70		
" " Field Products	75		
" " Dairy "	7 95		
" " Horticultural Products	7 65		
" " Arts and Manufactures	12 00		
" " Growing Crops	38 70		
		120 75	

Lambton.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		17 20	
" Members' Subscriptions		104 00	
" Legislative Grant		80 00	
			201 20
Cr.			
By Prizes for Live Stock	65 20		
" " Dairy Products	32 25		
" " Growing Crops	84 00		
		181 45	
" Working Expenses		19 75	
			201 20

REPORT.

Your Directors in laying before you their annual report, would express their gratitude to that Beneficent Being, who in his goodness has given us such a bountiful harvest, and while we, the tillers of the soil, have full barns and cellars, let us not forget those who through sickness or misfortune are suffering cold or hunger, but let us come out with a liberal hand, not forgetting that every one in affliction is our brother.

Fall wheat has been a fine crop, and we would recommend a greater breadth of land to be sown as it has done well these few years back.

Spring wheat has given a good return from good land and has not been injured by the fly to any great extent; at the same time we would recommend a change of seed as greatly needed, or at least a change of soil or from one locality to another, as a means to insure a better return.

Peas have been a very good crop, but in general there is not enough of attention paid to the seed sown. We would call attention to some new varieties of the pea such as the Crown Pea, which is highly spoken of by those who have tried them as a means of improving this highly valuable crop.

Indian Corn, a fair crop: some more attention paid to early ripening varieties, perhaps would cause more of it to be planted.

Of the new varieties of potatoes of which many were planted, the returns have been good and sound, and in our opinion the old varieties should be put aside altogether, and none but the new planted.

Carrots and turnips good, but few comparatively raised, considering the value of the crop for preparing land for a crop of wheat and keeping stock in good order during winter.

Our Exhibition was well attended and a fair show of animals on the ground, horses, and especially cattle were good, sheep very good: however, more care should be given to the selecting of fine animals to breed from.

Gloucester.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 47	
" Members' Subscriptions		116 00	
" Legislative Grant		89 23	
" Proceeds of Society's Land		79 00	
			304 70
Cr.			
" Prizes for Live Stock	90 08		
" " Field Products	9 00		
" " Dairy	9 56		
" " Growing Crops	51 78		
	160 42		
Retained	4 64		
		155 78	
" Purchase of Land		100 00	

	$ cts.	$ cts.	$ cts.
Cr.			
By Working Expenses		43 50	
			299 28
Balance in hand			5 42

Osgoode.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		79 73	
" Members' Subscriptions		102 00	
" Legislative Grant		80 00	
" Proceeds Sale of Stock		24 00	
			285 73
Cr.			
" Purchase of Live Stock		224 43	
" Keep of Stock		22 00	
" Working Expenses		15 30	
			261 73
Balance in hand			24 00

NOTE.—The Directors speak of the improvement that is going on in the breeds of live stock in the Township, the Society having several young animals of good quality.

Russell.

	$ cts.	$ cts.	$ cts.
Dr.			
To 51 Members' Subscriptions		136 10	
" Legislative Grant		106 00	
			242 10
Cr.			
By Balance due Treasurer		18 87	
" Prizes for Live Stock	88 75		
" " Field Products	25 70		
" " Dairy "	10 85		
" " Horticultural Products	10 00		
" " Arts and Manufactures	19 25		
" " Growing Crops	26 25		
		180 80	
" Agricultural Publications		22 00	
" Working Expenses		27 60	
			249 27
Balance due Treasurer			7 17

SIMCOE, NORTH.

	$ cts	$ cts.	$ cts.
Dr.			
To Balance in hand		171 27	
" 155 Members' Subscriptions		173 00	
" Admission to Show		167 90	
" Legislative Grant		700 00	
" Special Prizes		100 00	
" Licenses, Rents of Stables, &c		99 75	
			1411 92

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	307 00		
" " Field Products	88 00		
" " Dairy "	44 00		
" " Horticultural Products	32 50		
" " Agricultural Implements	50 00		
" " Arts and Manufactures	60 50		
	582 00		
" Unpaid	127 50		
		454 50	
" Prizes of Previous Year		38 75	
" Legislative Grant to Township Societies		418 51	
" Preparing Show Grounds		90 00	
" Working Expenses		190 48	
			1192 24
Balance in hand			219 68

REPORT.

* * * * *

Your Directors commenced the year by making some important alterations in the By-laws of the Society. It was not without mature consideration that the more liberal terms of membership, subscribers of one dollar, be entitled to unlimited entries at the Fall Show which, however, has not resulted in the increase of members anticipated.

Your Directors consider that the premiums they are enabled to offer are too small to induce exhibitors to come from the more distant parts of this large County, and are more confirmed in this opinion from the increased number of entries where any special prizes were offered. They see the only remedy for this is in liberal grants being made to the Society by the County Council, and the Council of the Town of Barrie, and would recommend the incoming Board to memorialize the above named Corporations for that purpose.

A Seed Fair was held in the Spring, but owing to the failure of the grain crops the previous year, was not at all equal to former shows.

Your Directors regret to state that their endeavours to make the Quarterly Fairs at Barrie a success have hitherto failed, although at the March Fair liberal prizes were offered for the best animals, and it was extensively advertised. The farmers could not be awakened to the benefit which would result from successful fairs of the kind.

Your Directors are pleased to note the increasing interest taken in our Fall exhibitions. That the change from a one day to a two days' show has been entirely successful, and although the morning of the second day was very unpropitious, preventing many from a distance from coming in. Over 1,000 visitors entered the grounds on that day. The net proceeds of the tickets sold at the gates amounted to $167 90.

The large outlay of nearly $100 was found necessary to provide increased accommodation in the shape of tables and stands, which have been securely housed in the stalls belonging to the Society and an insurance effected on the whole.

The animals and articles shown were generally of superior excellence except in roots and vegetables, which owing to the dryness of the season were almost a failure.

Notwithstanding the shortness of the pasture, extra prizes being offered for butter, there were 53 entries made of that article. The same with apples induced 39 entries to be made in that class. A large quantity of grain was exhibited of very superior quality.

The total amount of entries in all classes amounted to 817, being a large increase on any previous show.

Your Directors would draw your attention to the fact of the Society being without grounds of its own for exhibition purposes, and would suggest to the incoming Board for their consideration the securing of grounds for that purpose.

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Medonte and Flos.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		70 00	
" 53 Members' Subscriptions		99 00	
" Legislative Grant		60 00	
			229 00
Cr.			
By Prizes for Live Stock	79 00		
" " Field Products	3 50		
" " Dairy "	6 50		
" " Horticultural Products	2 50		
" " Agricultural Implements	5 50		
" " Arts and Manufactures	23 00		
	120 00		
Unpaid	111 50		
		8 50	
" Agricultural Publications		39 40	
" Working Expenses		21 71	
			69 61
Balance in hand			159 39

Nottawasaga.

Dr.	cts.	$ cts.	$ cts.
To Balance in hand		84 14	
" 170 Members' Subscriptions		192 50	
" Admissions to Show		23 55	
" Legislative Grant		111 26	
" Municipal Grant		40 00	
			451 45
Cr.			
By Prizes for Live Stock	155 00		
" Field Products	39 50		
" Dairy "	6 00		
" " Horticultural Products	20 00		
" Agricultural Implements	16 00		
" Arts and Manufactures	31 50		
" " Ploughing Match	28 00		
		296 00	
" Working Expenses		73 26	
			369 26
Balance in hand			82 19

NOTE.—The Society is reported to be steadily progressing, and the Fall Show was highly satisfactory. The ploughing match was well attended, the competition being keen both in the boys' and men's classes, and the work performed was superior, on the whole, to any former occasion.

Orillia.

Dr.	cts.	$ cts.	$ cts.
To Balance in hand		24 65	
" 97 Members' Subscriptions		169 00	
" Admissions to Show		47 70	
" Legislative Grant		100 50	
" Special Prizes		58 50	
" Miscellaneous Receipts		22 53	
			422 88

Cr.	$ cts.	$ cts.
By Prizes awarded in Cash	136 50	
" " articles donated, valued at	58 50	
" Working Expenses	54 08	
		249 08
Balance in hand		173 70

REPORT.

* * * * *

The Fall Show held on the 10th October last was decidedly a success, both in regard to the quantity and quality of articles exhibited, and the large amount of prizes awarded.

The Asylum Grounds and Buildings having been obtained free of charge by the permission of the Government Inspector of Prisons and Asylums, Mr. Langmuir, to whom the thanks of this Society are due), added not only to the appearance but the great convenience of the vast number who visited the fair, and we were thereby enabled by the advantages thus afforded to charge a small admission fee to the grounds, which added the handsome sum of $40 95 to the funds of the Society. The show of horses we consider good, especially horses for general purposes and breeding mares. The total number of horses of all kinds exhibited was 38. The show of cattle was also good, especially working oxen, eleven yokes being on exhibition; milch cows good, one and two years' old heifers also good; calves fair; fat cattle fair, but few in number. The numbers exhibited in Durham Class, 16, Devon, 8, Grades, 31; the total number of cattle on exhibition of all classes, 55.

The show of sheep, as reported by the judges, was really excellent in regard to breeding and otherwise. The number of Leicester on exhibition, 25: Cotswold, 15: Southdown, 16. Total number, 56.

The swine exhibited, although not very plentiful, were of a superior class; the number of Berkshire, 15, Suffolk, 4, total number 19; thus we have the total number of animals of all kinds exhibited one hundred and sixty-eight.

In dairy, field, and garden produce we had a good exhibition, especially the former, there being the unusual large number of thirty-seven entries for butter, in which the judges report a very keen competition, very many samples being of superior quality. Cheese good, but deficient in number of entries.

Field and garden produce was of a very good quality and in abundance, except cabbage, none being on exhibition: the crops being poor through drought. Total number of entries for field produce 31, for garden produce 22.

Manufactures very fairly represented, and also implements, considering this being the first exhibition.

Poultry we may say the same, some very fine specimens being exhibited, although deficient in numbers.

* * * * *

Ont.

Dr.	$ cts.	$ cts.	$ cts.
To 71 Members' Subscriptions		80 00	
" Legislative Grant		44 60	
			124 60
Cr.			
By Balance due Treasurer		25 04	
" Prizes for Live Stock	33 00		
" " Field Products	20 00		
" " Dairy "	7 50		
" " Horticultural Products	6 50		
" " Arts and Manufactures	2 00		
" " Ploughing Match	15 00		
		84 00	
" Agricultural Publications		8 00	

Cr.			
By Working Expenses		$ cts. 19 40	$ cts.
			136 44
Balance due Treasurer			11 84

Sunnidale.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		4 11	
" 87 Members' Subscriptions		89 00	
" Admissions to Show		2 10	
" Legislative Grant		30 25	
" Municipal Grant		30 00	
" Miscellaneous Receipts		3 00	
			158 46
Cr.			
By Prizes for Live Stock	63 25		
" " Field Products	24 20		
" " Dairy "	3 75		
" " Horticultural Products	5 10		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	13 40		
" " Ploughing Match	16 00		
		129 70	
" Preparing Show Grounds		2 00	
" Working Expenses		21 98	
			153 68
Balance in hand			4 78

Vespra.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		2 28	
" 65 Members' Subscriptions		120 00	
" Legislative Grant		71 40	
" Municipal Grant		25 00	
			218 68
Cr.			
By Prizes for Live Stock	73 75		
" " Field Products	10 50		
" " Dairy "	5 50		
" " Horticultural Products	11 00		
" " Arts and Manufactures	8 15		
	108 90		
Unpaid	43 75		
		65 15	
" Prizes of Last Year		18 00	
" Agricultural Publications		45 00	
" Working Expenses		28 49	
			156 64
Balance in hand			62 04

REPORT.

* * * * *

Although the prize list was enlarged, the annual show was scarcely as satisfactory as in former years. One reason of the falling off was—and your Directors would advise it to be

guarded against in future years—holding it too early in the season, before fall seeding was finished, which prevented a good many from attending who would have been there had it been held later. Another reason, over which they had no control, was the extreme dryness of the season, causing a great deficiency in most of the spring crops, consequently there was little in the shape of vegetables and that class of produce raised fit to exhibit. On account of the pastures being dried up, stock of all kinds was in poor condition and unfit to show.

The year 1871 will be remembered in this part of Canada as a dry and scarce season. With the exception of winter wheat, all kinds of crops may be set down under an average.—hay and roots particularly have yielded very poorly; in many instances the root crop was a failure. This year will be noted, too, as the one in which the dreaded potato beetle made its advent amongst us. Though at present it has done us little or no injury, the pest is with us, and there is little doubt but after next summer we shall have a doleful tale to tell of its ravages. It would be well for farmers to plant only as much ground as they can well look after, and be determined to fight off the "varmint," without giving any quarter.

Your Directors intended, by offering a more extended prize list, to make the inside show at the last exhibition attractive enough to induce visitors to pay a small fee for admission, to help the funds of the Society: but circumstances proved against it. They would strongly recommend their successors to carry it out at their next show, believing that, if properly arranged, quite a few dollars might be realized in that way.

SIMCOE, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		298 10	
" 2 3 4 Members' Subscriptions		224 00	
" Admissions to Show		238 65	
" Legislative Grant		700 00	
" Special Prizes		45 00	
" Proceeds Rent of Booths, Excursions, &c.		110 50	
			1616 25
Cr.			
By Prizes for Live Stock	390 50		
" " Field Products	120 50		
" " Dairy "	32 50		
" " Horticultural Products	30 00		
" " Agricultural Implements	103 00		
" " Arts and Manufactures	59 50		
	736 00		
Unpaid	2 05		
		733 95	
" Prizes of previous year		52 50	
" Legislative Grant to Township Societies		416 50	
" Working Expenses		200 39	
			1403 34
Balance in hand			212 91

Esso.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		130 00	
" Admissions to Show		19 95	
" Legislative Grant		65 00	
			214 95
Cr.			
By Balance due Treasurer		00 31	
" Prizes for Live Stock	63 50		

Dr.	$ cts.	$ cts.	$ cts.
By Prizes for Field Products	24 50		
" " Dairy "	1 50		
" " Horticultural Products	8 50		
" " Agricultural Implements	20 00		
" " Arts and Manufactures	24 75		
		142 75	
" Preparing Show Grounds		2 00	
" Working Expenses		24 52	
			169 58
Balance in hand			45 37

Innisfil.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		12 00	
" Members' Subscriptions		112 00	
" Admissions to Show		14 35	
" Legislative Grant		56 00	
			194 35
Cr.			
By Prizes for Live Stock	78 50		
" " Field Products	15 00		
" " Dairy "	6 00		
" " Horticultural Products	14 50		
" " Agricultural Implements	17 50		
" " Arts and Manufactures	17 50		
		149 00	
" Working Expenses		30 65	
			179 65
Balance in hand			14 70

REPORT.

The Directors and officers of the above Society would report that their annual Show was this year held at the Village of Victoria, on Tuesday, the 11th day of October, and showed a marked improvement over former years, the number of entries being 441, which shows an increase of 120 over 1870.

Our cereals in general are below the usual average, which may, however, be easily accounted for by the great drought that prevailed almost uninterruptedly throughout the entire season. The Fall wheat is, however, rather above the average. From information we have gathered we have arrived at the conclusion that the following is as near as possible the average yield:—

Fall Wheat	35	bushels per acre.
Spring do.	15	" "
Oats	20	" "
Peas	20	" "
Barley	30	" "
Potatoes	50	" "
Turnips	500	" "
Hay	1	Ton "

Apples being very scarce and generally of inferior quality. Of other vegetables their quality was excellent, and in some instances the Judges had the remarkably difficult task of deciding between 28 different samples. In implements there was unusual competition and excellent articles shown. In waggons, however, we noticed no improvement. In regard to stock—In Class 1, General Purpose Horses, there was great competition, the palm being borne away by Mr. Lucas. In carriage teams, also, there was great competition, several magnificent teams

being shown. In horned cattle there was a marked improvement, the "Durhams" being decidedly the favourite breed. In hogs we noticed no improvement. Some fine specimens of poultry were shown, but not of any improved breed.

* * * * *

Malmur.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		31 21	
" 92 Members' Subscriptions		106 00	
" Admissions to Show		13 20	
" Legislative Grant		53 00	
" Miscellaneous Receipts		7 00	
			210 41
Cr.			
By Prizes for Live Stock	56 25		
" " Field Products	15 00		
" " Dairy "	4 00		
" " Horticultural Products	17 75		
" " Agricultural Implements	9 00		
" " Arts and Manufactures	15 25		
		117 25	
" Prize of last year		2 00	
" Preparing Show Grounds		3 50	
" Working Expenses		53 26	
			176 01
Balance in hand			34 40

Tecumseth.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		89 46	
" Members' Subscriptions		193 00	
" Admissions to Show		18 00	
" Legislative Grant		104 50	
" Municipal Grant		25 00	
			429 96
Cr.			
By Prizes for Live Stock	146 96		
" " Field Products	42 75		
" " Dairy "	7 00		
" " Horticultural Products	10 00		
" " Agricultural Implements	23 50		
" " Arts and Manufactures	21 75		
		251 96	
" Working Expenses		44 91	
			296 87
Balance in hand			133 09

Tossorontio.

	$ cts	$ cts.	$ cts.
Dr.			
To Balance in hand		109 19	
" Members' Subscriptions		214 50	
" Admissions to Show		149 55	
" Legislative Grant		95 50	
			568 74

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	154 50		
" " Field Products	55 50		
" " Dairy "	21 50		
" " Horticultural Products	37 75		
" " Agricultural Implements	70 00		
" " Arts and Manufactures	47 75		
		387 00	
" Preparing Show Grounds		14 58	
" Working Expenses		51 60	
			453 18
Balance in hand			115 56

Note.—The dryness of the season materially affected the root crops and dairy products. With these exceptions the exhibition was better than could have been anticipated. The ploughing match, on account of the hardness of the ground, did not take place.

STORMONT.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		19 89	
" 77 Members' Subscriptions		77 00	
" Legislative Grant		700 00	
" Award of Arbitration from Cornwall Society		54 43	
" Proceeds Sale of Seeds		8 20	
			859 52
By Prizes for Live Stock	197 22		
" " Field Products	60 37		
" " Dairy "	24 15		
" " Horticultural Products	23 57		
" " Agricultural Implements	73 02		
" " Arts and Manufactures	74 68		
		453 01	
" Legislative Grant to Township Societies		280 00	
" Preparing Show Grounds		25 00	
" Working Expenses		69 00	
			827 01
Balance in hand			32 51

Finch.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		0 45	
" 93 Members' Subscription		96 00	
" Admissions to Show		6 00	
" Legislative Grant		165 00	
" Miscellaneous Receipts		2 00	
			269 45
Cr.			
By Prizes for Live Stock	94 50		
" " Field Products	26 25		
" " Dairy "	12 50		
" " Horticultural Products	7 00		
" " Agricultural Implements	27 25		
" " Arts and Manufactures	29 75		

	$ cts.	$ cts.	$ cts.
Cr.			
By Prizes for Ploughing Match ...	12 00		
	209 25		
Unpaid	14 25		
		195 00	
" Preparing Show Grounds		4 00	
" Working Expenses		24 29	
			223 29
Balance in hand			46 16

Osnabruck.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		12 42	
" 60 Members' Subscriptions		73 00	
" Legislative Grant		115 00	
			200 42
Cr.			
By Prizes for Live Stock	107 73		
" " Field Products	20 30		
" " Dairy "	6 80		
" " Horticultural Products	5 20		
" " Agricultural Implements	19 25		
" " Arts and Manufactures	14 55		
		173 83	
" Preparing Show Grounds		3 00	
" Working Expenses		25 50	
			202 33
Balance due Treasurer			1 91

TORONTO.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		57 40	
" 354 Members' Subscriptions		1926 30	
" Admissions to Show		967 60	
" Legislative Grant		550 00	
" Municipal Grant		1000 00	
			4501 30
Cr.			
By Prizes for Live Stock	940 00		
" " Field Products	243 00		
" " Dairy "	67 50		
" " Horticultural Products	1040 00		
" " Agricultural Implements	179 50		
" " Arts and Manufactures	682 50		
	3152 50		
Unpaid	95 50		
		3057 00	
" Preparing Show Grounds		620 24	
" Printing and Band		375 75	
" Agricultural Publications		19 65	
" Working Expenses		410 86	
			4483 50
Balance in hand			17 80

REPORT.

During the past year three exhibitions were held by the Society—the first one in the Music Hall, on the 24th of May, the Queen's Birth Day. The display of plants and flowers was very good, some new and rare varieties being shown by the Hon. D. L. Macpherson, C. S. Gzowski, Esq., T. C. Chisholm, Esq., and by other contributors. A few good specimens of vegetables were shown, but the quantity was small. In fruits there were several lots of apples shown. The most prominent for all good qualities were exceedingly well kept specimens of the "Northern Spy," which had a bloom on them as handsome as when they were first picked from the tree. This variety is rapidly gaining in public estimation, and is being largely planted, as it is well adapted to this section of Ontario. Fine specimens of the Golden Russet, R. I. Greening, and Swaar, were also on the table. These are all old favourite kinds. The attendance of visitors, although not what should be expected for this city, was much better than in previous years.

The Summer Exhibition was held in the Horticultural Gardens which were kindly granted for the purpose, on the 11th of July. The show of plants, as usual, was very good, some fine and rare specimens being shown by the same gentlemen who contribute so liberally on every similar occasion. Some good vegetables were shown, but the number of entries indicates the very small interest taken in the Society's operations by the large proportion of professional and amateur producers. In apples the only variety shown was the Cooper's Market, a medium sized red apple—evidently a very long keeper.

Several kinds of strawberries were shown, the well known Wilson's Albany, and Triomphe de Gand being the finest.

In raspberries, the Brinkle's, Orange, Franconia, and Red Antwerp, remain at the head of the list; and in currants, the same may be said of the White Grape, Red Cherry, and Black Naples, in their several classes. In cherries, Tradescants, Black Heart, Black Eagle, and Napoleon Bigarreau took the best premiums. There were also exhibited some fine green gooseberries, and a few bunches of ripe hot-house grapes.

At this exhibition the display of fruit was small, owing to the very unfavourable season.

The Autumn Exhibition was held in the Crystal Palace and grounds, on the 19th, 20th, and 21st of September. The first day was devoted to the exhibition of all entries other than live stock; on the second and third days the live stock was also on the ground. There were 120 entries of horses; 90 of cattle; 82 of sheep; 33 of pigs, and 88 of poultry. In agricultural and dairy products there were 195 entries; in implements 55 entries. There were 362 entries of fruits; 215 of plants and flowers; and 212 of vegetables. In the fine arts there were 109 entries; of ladies' work 81 entries, and of manufactured goods only 97 entries.

While the show of live stock, fine arts, ladies' work, plants and flowers, and vegetables was very good, the grand feature of this exhibition was, without doubt, the display of fruit, which was very large, and in point of quality could hardly be surpassed.

In apples, the finest specimens were, unquestionably, those from the neighbourhood of Niagara, they being much riper and better coloured than those grown in this section—the exhibition being held a little too early for the fruit in the neighbourhood of Toronto. Particular mention may here be made of the Swayzie Pomme Grise and the Baldwin, which surpassed in size and colouring any specimens of these two kinds ever before shown in Canada. The following varieties were also unusually fine, and bore off the prizes for best varieties in their several classes, viz., Duchess of Oldenburg, Fall Pippin, St. Lawrence, Gravenstein, Ribston Pippin, Fameuse, R. I. Greening, Northern Spy, Golden Russet, Swaar, King of Tompkins County, and Spitzenbergh.

Some very fine seedling apples were shown: two kinds from the neighbourhood of Weston, named Weston Beauty and Weston Strawberry, being awarded prizes. The former is thought to be worthy of extensive cultivation.

Too much praise can not be bestowed upon the pears shown: and of this fruit the neighbourhood of Toronto produced as fine specimens as were produced in any other section of the Province. The season seems to have been unusually favourable to the production of this fruit, as crops everywhere were large, and the specimens unexcelled in quality and size. The cultivation of the pear is rapidly on the increase in Canada, and so long as such fine specimens as were here shown continue to be produced, their cultivation will still further increase. The leading kinds on the tables were Bartlett, Louise Bonne de Jersey, Ananas d'Ete, Flemish

Beauty, Sheldon, Beurre Diel, Belle Lucrative, Clairgeau, Duchesse d'Angouleme, Howell, Seckell, Easter Beurre, Glout Morceau, Vicar of Winkfield, and Lawrence.

In grapes the season seems to have been favourable, and they were in consequence largely exhibited. Hardy varieties were well ripened, considering the time of the exhibition. We noticed fine specimens of Rogers' No. 3, 4, 9, 15, and 19; Walter, Iona, Concord, Delaware, Hartford Prolific, Hybrid, Adirondac, Isabella, and a few bunches of Eumelan. In hot-house grapes the display was very good, and in this class we were glad to notice several new exhibitions. It may be mentioned that by a little more care and attention in thinning the bunches on the part of the grower, exhibitors would place their productions in the very front rank. The finest kinds were the Black Hamburg and its varieties, Muscat, Hamburg, Grizzly, Frontignan, Lady Downes, and Deacon's Superb. It may be well to mention that in this class many new and superior varieties have been lately introduced in England and imported to this country, and it is hoped in another season to see some of them on exhibition here. Plums, peaches, and a few other fruits were exhibited but in small quantities.

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VICTORIA, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		225 11	
" 68 Members' Subscriptions		73 00	
" Legislative Grant		700 00	
" Municipal Grants		250 00	
" Miscellaneous Receipts		5 00	
			1253 11
Cr.			
By Prizes for Live Stock	132 25		
" " Field Products	41 50		
" " Dairy "	8 25		
" " Horticultural Products	5 50		
" " Agricultural Implements	18 75		
" " Arts and Manufactures	23 50		
" " Ploughing Match	30 00		
	259 75		
Unpaid	26 50		
		233 25	
" Prizes of Previous Year		61 00	
" Legislative Grant to Township Societies		384 40	
" Preparing Show Grounds		229 00	
" Ploughing Match		30 00	
" Agricultural Publications		3 75	
" Working Expenses		162 70	
			1104 10
Balance in hand			149 01

Bexley, Seaton, and Digby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		9 63	
" 51 Members' Subscriptions		51 00	
" Legislative Grant		66 30	
			126 93
Cr.			
By Prizes for Live Stock	38 50		
" " Field Products	17 50		
" " Dairy "	6 75		

	$ cts.	$ cts.	$ cts.
By Prizes for Arts and Manufactures	11 00		
	73 75		
Unpaid	6 75		
		67 00	
" Prizes of previous year		33 00	
" Working Expenses		21 88	
			121 88
Balance in hand			5 05

Eldon.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		148 38	
" 135 Members' Subscriptions		141 00	
" Admissions to Show		18 50	
" Legislative Grant		140 00	
			447 88
Cr.			
By Prizes for Live Stock	63 60		
" " Field Products	11 70		
" " Dairy "	8 50		
" " Horticultural Products	10 00		
" " Agricultural Implements	7 50		
" " Arts and Manufactures	15 10		
" " Ploughing Match	10 00		
		126 40	
" Preparing Show Grounds, Lumber, &c		12 75	
" Purchase of Live Stock		125 00	
" Working Expenses		57 00	
			321 15
Balance in hand			126 73

Fenelon.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		46 10	
" Members' Subscriptions		64 00	
" Admissions to Show		17 85	
" Legislative Grant		84 50	
" Proceeds Sale of Seeds		13 94	
			226 39
Cr.			
By Prizes for Live Stock	72 20		
" " Field Products	17 45		
" " Dairy "	3 00		
" " Horticultural Products	6 80		
" " Agricultural Implements	5 00		
" " Arts and Manufactures	21 70		
	126 15		
Unpaid	8 17		
		117 98	
" Purchase of Seed		10 00	
" Working Expenses		38 48	
			166 46
Balance in hand			59 93

NOTE.—The Directors urge the necessity of greater efforts on behalf of the Society. The extremely dry weather seriously affected all spring crops, and the show in most kinds of grain was consequently deficient.

Muskoka.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		129 65	
" 67 Members' Subscriptions		69 00	
" Admissions to Show		15 45	
" Legislative Grant		93 00	
" Proceeds Sale of Seeds		58 15	
" Miscellaneous Receipts		17 30	
			382 55
CR.			
By Prizes for Live Stock	105 25		
" " Field Products	39 00		
" " Dairy "	11 00		
" " Horticultural Products	11 50		
" " Agricultural Implements	6 00		
" " Arts and Manufactures	34 75		
	207 50		
Unpaid	8 75		
		198 75	
" Prizes of previous year		4 50	
" Preparing Show Grounds		30 23	
" Purchase of Seed		58 75	
" Working Expenses		53 88	
			346 11
Balance in hand			36 44

VICTORIA, SOUTH.

DR.	$ cts.	$ cts.	$ cts.
To Balance in hand		120 75	
" 103 Members' Subscriptions		110 00	
" Admissions to Show		167 82	
" Legislative Grant		700 00	
" Municipal Grants		450 00	
" Miscellaneous Receipts		13 50	
			1562 07
CR.			
By Prizes for Live Stock	197 00		
" " Field Products	41 25		
" " Dairy "	17 25		
" " Horticultural Products	43 25		
" " Agricultural Implements	22 50		
" " Arts and Manufactures	44 00		
		365 25	
" Legislative Grant to Township Societies		363 00	
" Preparing Show Grounds		260 00	
" Working Expenses		134 33	
			1122 58
Balance in hand			439 49

REPORT.

The Directors of the South Riding Agricultural Society of the County of Victoria, in submitting this their fourth annual Report, take pleasure in congratulating you on the abundant harvest of cereals with which not our own County only, but our Province generally has been blessed. The crop of fall wheat has been the best known for many years; in quality perhaps hardly ever equalled. Oats, barley and peas have been also abundant, and the samples exceedingly fine. Of Indian corn we are not enabled to make any special remark, as very little is planted by our farmers.

The hay crop was very much below the average, owing to the protracted drought which prevailed through the spring and summer months, and the scarcity has caused the price to rule unusually high, as well as to advance the price of straw. Potatoes and other root crops, owing to the same cause, have been below an average crop, but the quality of potatoes has been good: the disease from which this tuber suffered considerably in 1870 shewed no symptoms whatever in '71. The Colorado potato beetle made its appearance in a few localities, but too late in the season to do any serious injury; but there may be reason to fear that we shall suffer to a greater extent from its ravages next season, and would therefore suggest that farmers do not plant too extensively, nor rely too much upon it as article of food for man or beast.

It is gratifying to be able to state the almost total disappearance of the midge, which for many years has proved more or less a pest. And again, it is not only a gratification to have it in our power to congratulate you upon the abundant crops and the favourable season we were mercifully granted for securing them, but also upon the remunerating prices you are obtaining for your farm productions.

On referring to the show the Society held in the spring, we have to report that we considered it somewhat in advance of former years, as a whole. There was a better display of horses, but we observed little or no improvement in bulls, which caused us some disappointment. The fall show was generally fair, and in some departments in advance of previous ones, particularly in grain and horses; the show of sheep was fair, and in pigs there was a slight improvement: but for horned cattle, we are sorry to say, we cannot render a favourable verdict. There was a falling off in vegetables, which was attributable, no doubt, to the dry, parching season. The show of poultry exceeded that of any previous year. In the ladies' work and fine arts departments, although we think not comprising so numerous a list of articles as the show of '70, still we were led to observe that better taste had been displayed than heretofore in selecting and producing those that were on exhibition. The dairy produce was creditable; and where the quality of such a number of packages was so similar, it must have been a task of no small difficulty for the judges to decide which was best. In domestic manufactures there was a decided improvement; and particularly conspicuous amongst these were the several pieces of home-made carpets. In fruit the display was not satisfactory, the samples of apples being smaller than usual, owing to the dry season, while plums were a complete failure. The show of melons and grapes was rather below par, although there were some fine bunches of open air grapes contributed by four or five exhibitors, and the show was too late in the season for melons. The planting of fruit trees, we find, is steadily receiving more attention, and those whose orchards have already commenced bearing, begin to realize the fact that growing fruit of good quality is profitable, and experience goes to show that the demand for fruit is increasing every succeeding year.

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It affords us more than ordinary gratification to be able to say that the farming community, as well as other professions, have great cause for thankfulness for the prosperity which prevails wherever we look around us. The demand for mechanics (especially carpenters and bricklayers) and labourers was never so great. The number of buildings, substantial and ornamental, which were erected in both town and country last season is patent to all; and from the building materials now being laid down, and the number of contracts entered into, show that our progress is on no limited scale. New churches, of no mean structure or indifferent design, new school-houses, substantial, convenient and commodious, meet the eye in every part of the County, and are all evident indications of both moral and material progress. Brickyards, it is clear, will have to extend their limits in order to meet the increased demand. Our county town we are happy to see rapidly increasing, and with the prospect of additional

railroad accommodation we may reasonably look forward for increased facilities for transmitting to market and disposing of the farm productions of a large section of country. The large machine shop now erecting by Captain Crandall will, as soon as it is in operation, extend its benefits, as one great aim of the proprietor will be to improve machinery for facilitating agricultural operations.

The new steamboat, for navigating our inland waters, which the same enterprising individual has now on the stocks, will, when finished, bring up the number of steamers plying to and from Lindsay to an even half-score. Eight of these will be engaged in towing lumber and carrying passengers, and the others in carrying passengers and freight only.

With respect to the general system of farming throughout the Riding, we have not failed to observe that a majority of our farmers have very much improved within the last few years in their modes of cultivating their lands, and we find the introduction of labour-saving machines is constantly on the increase: still we are obliged to confess that we meet with a good deal of indifferent milk-and-water farming,—such as over-cropping, unskilful tillage, neglect of under-draining, waste of manure, lack of system: in short, careless, slovenly husbandry and mismanagement in every respect. Such are to be met with in every community, and who, instead of honouring their profession, are a greater eyesore and stumbling-block than if they were mere drones. The miserable mortal who impoverishes his land, uses rude implements, ignorant cultivation, and who keeps coarse, ill-bred live stock, and allows a large portion of his acres to be overrun with noxious weeds, must feel how degraded a position he stands in, and his mind must sink lower with his poverty, for poverty is sure to be his lot.

Although your Society greatly increased its membership during the past year, it is still to be regretted that it does not get that cordial support to which it is entitled. We observe a petty selfishness prevailing amongst many, who, when you approach to solicit their annual subscription, look upon you as a beggar asking for charity, and before actually subscribing have first to calculate what they are to get in return. Such as these are in all probability to be found in other counties, as well as ours; but let us hope their number will decrease and become "beautifully less" as agricultural science, knowledge, sobriety and morality advance. It is a pity there should be so many who cannot appreciate the legitimate objects of the Society. The awarding of prizes should be regarded as a mere trifle, compared with the results which are produced by bringing all the experienced agriculturists of the County together, where they compare views and acquire information from each other.

We think we speak the sentiments of the community generally when we say that the last year's doubtful experiment, in changing from a one day's to a two days' show, has been successfully tested. Creditable as our success may have been in carrying out the objects of the Society, every year unavoidably shows us defects and opportunities for improvement. We respectfully submit that it is of the highest importance that competent and impartial Judges should be selected; still, we know from experience that difficulties often arise from those so fixed upon not attending, and consequently very trying duties devolve upon the Directors in having to look up others to fill the places of those they had reason to expect, and this too often at the very last moment. We have deemed it advisable to make some reference to the onerous duties which have been hitherto so satisfactorily discharged by our worthy Secretary; the manner in which these have been performed, we feel assured, will have met the approbation of not only the members of the Society, but of the community at large, and call for our warmest acknowledgements.

We are sorry to have to notice the fact, that during the past excessively dry summer several severe misfortunes and losses occurred within the County from extensive fires, which raged in the woods and were communicated to dwellings, barns, fences and crops.

In conclusion, we briefly sum up by respectfully exhorting every member to aim at the most approved cultivation, by employing the very best labour-saving machines and skilled manual labour; taking the best care possible of your stable manure and all other fertilizers, and see that they are applied to the soil at the most favourable seasons: adopt a regular system of rotation of crops, and by these means keep your land in a high state of fertility. Let not the ratio of labour trouble you: if you spend less or invest less in labour your returns will be less, and more as you invest more to develope the resources of your farms. The agriculturist is the manufacturer of food for the nation, and upon his skill, under Providence, it depends whether plenty or scarcity shall prevail in the land.

Emily.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		28 01	
" 55 Members' Subscriptions		55 00	
" Admissions to Show		40 00	
" Legislative Grant		74 00	
			197 01
Cr.			
By Prizes for Live Stock	60 00		
" Field Products	24 00		
" " Dairy "	5 25		
" " Horticultural Products	9 25		
" " Agricultural Implements	8 50		
" " Arts and Manufactures	23 75		
		130 75	
" Preparing Show Grounds		8 63	
" Working Expenses		20 08	
			159 46
Balance in hand			37 55

Mariposa.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		23 26	
" 67 Members' Subscriptions		67 00	
" Admissions to Show		10 31	
" Legislative Grant		84 00	
			184 57
Cr.			
By Prizes for Live Stock	118 00		
" " Field Products	11 95		
" " Dairy "	3 00		
" " Horticultural Products	4 85		
" " Agricultural Implements	1 00		
" " Arts and Manufactures	45 20		
		184 00	
" Working Expenses		34 38	
			218 38
Balance in hand			33 81

REPORT.

* * * * *

The Officers and Directors are glad to be able to report that increased attention is being paid to the various branches of industry in which our people are engaged; better tillage, drainage, with the improved methods of agriculture, are becoming general. Still there are many ways open for yet further advancement, but an important step is gained when those matters are securing a portion of deserved attention. In horticulture the Society cannot report as much advancement as they would like; still progress is being made. The Society have not imported any of the newer varieties of seeds, but some of our members have procured improved seed of various kinds as proved by the fine display of grain, roots, and vegetables at our last Fall Exhibition. In stock much improvement is noticeable in the different classes, especially in horses and sheep. Cattle of the improved breeds are not in the hands of as many of our people as they should be, but some very fine specimens were exhibited at our Spring and Fall Shows. In swine too, much improvement is discernable. Our people are making renewed efforts yearly to improve the quality and increase the variety of fruit. Very fine samples of plums, apples, and grapes are yearly shown. In manufactures we are glad to report increased

facilities: Mr. J. Weir of Oakwood having introduced tile-making in addition to brick-making machinery, and Mr J. A. Mason having very superior facilities for the manufacture of woollen goods, formerly under the proprietorship of Mr. Whiteside, sometime now established in the Township A rake and other farm implement manufactory we are also glad to report is successfully established at Little Britain, one of the business centres of the Township. We are also pleased to further report that steps have been taken by a few enterprising residents to establish an extensive cheese factory near Eden, to go into operation in early Spring. In arts and fancy work very creditable progress is being made, our shows proving that we are not low in the standard for a Township Society in these respects.

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Ops.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		13 51	
" 97 Members' Subscriptions		97 00	
" Legislative Grant		133 00	
" Proceeds Sale of Stock		35 00	
			278 51
Cr.			
" Purchase of Live Stock		258 50	
" Working Expenses		18 50	
			277 00
Balance in hand			1 51

REPORT.

Shortly after the commencement of operations for 1871 the prospect of this Society assumed a very gloomy aspect. Early in the year the Legislature of this Province passed an amendment to the Agricultural and Arts Act, by which it was rendered unlawful to hold a Show in the same town in which the County Society held its Show. Thus shut out of Lindsay the Directors turned their eyes in other directions, but could find no village or settlement of sufficient size within the Township of Ops to warrant them in thinking that a show held there would be successful. Under these circumstances subscribers came in very slowly, and it was at one period proposed to abandon the Society altogether, but bolder counsels ultimately prevailed. On the 19th June it was resolved to purchase two thorough-bred bulls, and Messrs Birch and Fisher were entrusted with the commission. They succeeded in purchasing the animals, one, "North Star," for $150, the other, "Sir Walter," for $85, both of which arrived in the Township about the end of June. So good an appearance did the bulls present, and so keenly was the want of improved stock felt in the neighbourhood, that subscriptions came in very fast, and the number of members was raised to one hundred, a number much in excess of anything we had reached in the last 6 or 7 years, but still very far below the natural strength of the Township. These bulls were permitted to serve two cows for each member of the Society gratis, and we may consequently hope for at least 150 calves of a greatly improved breed: a benefit your Directors may be permitted to hope quite as great, if not far greater, than has been conferred by any previous operations of the Society. On the 7th of October the bulls were sold by public auction, "North Star" realizing $229 and "Sir Walter" going for $20. The present owner of each bull is bound by the terms of sale to allow him to serve forty cows for members of this Society during the year 1872, free of all charge.

Your Directors think that they are jointly entitled to report that the operations of the Society for the year 1871 are successful; successful in point of a large increase of membership, and successful in point of conferring solid benefit upon the Township. No doubt many things may be improved upon, and we hope our successors will profit by our experience, and by their energetic and wise efforts raise the Society to a still more prosperous condition.

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Vermilion.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		72 29	
" 43 Members' Subscriptions		44 00	
" Admissions to Show		15 13	
" Proceeds Sale of Plaster		40 00	
" Miscellaneous Receipts		5 00	
			176 42
Cr.			
By Prizes for Live Stock	46 75		
" " Field Products	19 25		
" " Dairy "	4 75		
" " Horticultural Products	4 50		
" " Arts and Manufactures	11 75		
		87 00	
By Agricultural Publications		10 00	
" " Working Expense		26 82	
			123 82
Balance in hand			52 60

Lindsay Horticultural Society.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		117 59	
" 48 Members' Subscriptions		48 00	
" Admissions to Show		20 83	
" Legislative Grant		72 00	
" Miscellaneous Receipts		11 84	
			270 26
Cr.			
By Prizes for Fruits	28 15		
" " Flowers and Plants	41 20		
" " Vegetables	45 30		
		114 65	
" Preparing for Exhibition		18 72	
" Working Expenses		35 38	
			168 75
Balance			101 51

WATERLOO, NORTH.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		108 88	
" 160 Members' Subscriptions		173 50	
" Admissions to Show		178 10	
" Legislative Grant		700 00	
" Municipal Grants		255 00	
" Miscellaneous Receipts		18 00	
			1433 48
Cr.			
By Prizes for Live Stock	419 50		
" " Field Products	97 00		
" " Dairy "	31 75		
" " Horticultural Products	44 50		
" " Agricultural Implements	22 00		
" " Arts and Manufactures	75 00		
		689 75	

Cr.	$ cts.	$ cts.	$ cts
By Prizes of last year		8 00	
" Legislative Grant to Township Societies		280 00	
" Preparing Show Grounds		30 00	
" Working Expenses		293 79	
			1301 54
Balance in hand			131 94

Wellesley.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		60 90	
" Members' Subscriptions		148 00	
" Admissions to Show		14 20	
" Legislative Grant		140 00	
" Municipal Grant		40 00	
" Proceeds Sale of Stock		20 90	
			424 00
Cr.			
By Balance due Treasurer		34 35	
" Prizes for Live Stock	178 50		
" " Field Products	36 75		
" " Dairy "	21 00		
" " Horticultural Products	18 50		
" " Agricultural Implements	24 00		
" " Arts and Manufactures	25 75		
		304 50	
" Working Expenses		36 52	
			375 37
Balance in hand			48 63

Woolwich.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		76 67	
" 88 Members' Subscription		124 50	
" Legislative Grant		140 00	
" Municipal Grant		20 00	
			361 17
Cr.			
By Prizes for Live Stock	112 00		
" " Field Products	57 00		
" " Dairy "	15 00		
" " Horticultural Products	14 00		
" " Agricultural Implements	6 00		
" " Arts and Manufactures	33 00		
		237 00	
" Prize of Last Year		2 00	
" Working Expenses		50 43	
			289 43
Balance in hand			71 74

WATERLOO, SOUTH.

Dr.	$ cts.	$ cts.	$ cts
To Balance in hand		461 70	
" 290 Members' Subscriptions		301 00	

	$ cts.	$ cts.	$ cts.
Dr.			
To Admissions to Show		503 00	
" Legislative Grant		700 00	
" Municipal Grants		260 00	
" Proceeds rent of booths, &c.		137 00	
Cr.			2362 70
By Prizes for Live Stock	605 00		
" " Field Products	71 75		
" " Dairy	33 50		
" " Horticultural Products	41 50		
" " Agricultural Implements	72 00		
" " Arts and Manufactures	92 00		
		915 75	
" Legislative Grants to Township Societies		140 00	
" Preparing Show Ground		496 58	
" Purchase of Exhibition grounds		493 73	
" Grant to Fat Cattle Show		30 00	
" Working Expenses		285 14	
			2361 20
Balance in hand			1 50

Whitby.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		166 71	
" 159 Members' Subscriptions		160 50	
" Legislative Grant		140 00	
" Donations		30 50	
Cr.			497 71
" Paid Blandford Society for Union Show		392 08	
" Working Expenses		27 18	
			419 26
Balance in hand			78 45

Note.—This Society united with that of the Township of Blandford for a Union Show.

WELLAND.

	$ cts.	$ cts.	$ cts.
Dr.			
To Members' Subscriptions		175 00	
" Admissions to Show		302 85	
" Legislative Grant		700 00	
" Proceeds Sale of Grass		31 50	
" Miscellaneous Receipts		31 00	
Cr.			1240 35
By Balance due Treasurer		119 49	
" Prizes for Live Stock	385 00		
" " Field Products	56 99		
" " Agricultural Implements	38 25		
" " Arts and Manufactures	63 96		
		544 20	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		36 50	
" Working Expenses		109 32	
			1229 51
Balance in hand			10 84

REPORT.

The Directors, in submitting to this Society their record of the past year's proceedings, would observe that much pleasure was afforded to them in seeing the great success which attended their labours during the past year, and the support received from an enlightened and generous public. The success was marked in several particulars; the membership was larger than ever before manifested, the amount realized at the gate exceeded anything of the kind in the history of the Society; the amount realized last year being $202·15—this year $302·85, shewing an increase of $80 10 and the number of entries exceeded, in a very marked manner, that of any other year since its separation from the Sister County. Number of entries for 1870 being 954; for this year 1,055, shewing a net increase of 101, which indicates good progress.

The following classification of the more important animals may prove an interesting item of information:—At the Spring Show 5 stallions were entered; of thorough-bred bulls, 6; at the Fall Show, there were shown of team horses, 6; pair of matched carriage horses, 10; of horses, General Purposes, 14; of horses, style and speed, 10; of single carriage, 12; of mares and colts, Draught, 2; of mares and colts G.P., 10; of three-years' colts, D., 5; of three-years' colts, G.P., 12; of two-years' colts, D., 5; of two-years' colts, G.P., 7; of one-years' colts, D. 5; of one year's colts G.P., 8; of Durham cows, 5; of two-years' heifers D., 7; of one-year's heifers, D., 6; of bull calves, D., 3; of heifer calves, D., 4; of Galloway cows 3; of two-years' heifers, 3; of one-year's heifers, 4; of bull calves, 2; of grade cows, 12; of two-years' heifers, 5; of one-year's heifers, 8, of grade calves, 6; of three-years' steers, 6; of two-years' steers, 5; of one-year's steers, 4; of oxen, 5; of beef oxen, 6; of beef cows, 1.

The display of horses was very fine indeed, appearing in very prime condition. There were some excellent specimens of Durhams shown by those enterprising breeders, Messrs. Jones, Kline, and others, and it is gratifying to see that their labours have been duly rewarded. William Smith, of Grantham, deserves the thanks of this Society, for the fine herd of Galloways exhibited at the Fall Show of this Society.

The sheep as usual were really very excellent. Several of the members having devoted special attention to this division, and successfully.

The hogs as usual, were not numerous, but they were very good indeed. Roots in general were very fine,—potatoes in particular. The fruit far excelled that of last year. The different kinds of grains were well represented, the season being favourable for their growth and maturing.

The ladies' department was not quite up to the mark of last year, but it is to be hoped that this hint will stir them up to make that department more attractive in future.

Bertie.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		22 44	
" 65 Members' Subscriptions		80 00	
" Legislative Grant		67 00	
			169 44
Cr.			
By Prizes for Live Stock	108 40		
" " Field Products	16 85		
" " Dairy	1 70		
" " Horticultural Products	12 80		
" " Arts and Manufactures	15 80		
		155 55	
" Working Expenses		23 61	
			179 16
Balance due Treasurer			9 72

Crowland.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		6 60	

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		61 00	
" Admissions to Show		52 25	
			119 25
Cr.			
By Prizes for Live Stock	63 05		
" " Field Products	15 18		
" " Dairy "	2 00		
" " Horticultural Products	4 09		
" " Agricultural Implements	12 73		
		97 75	
" Preparing Show Grounds		1 00	
" Working Expenses		18 76	
			117 51
Balance in hand			1 74

Humberstone.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		8 26	
" Members' Subscriptions		67 00	
" Admissions to Show		2 00	
" Legislative Grant		55 76	
" Miscellaneous Receipts		1 00	
			134 12
Cr.			
By Prizes for Live Stock	66 68		
" " Field Products	16 42		
" " Dairy "	2 75		
" " Horticultural Products	7 44		
" " Agricultural Implements	14 38		
" " Arts and Manufactures	11 00		
		118 67	
" Working Expenses		15 45	
			134 12
			0 00

Stamford.

Dr.	$ cts.	$ cts.	$ cts
To 102 Members' Subscriptions		112 00	
" Legislative Grant		92 07	
" Municipal Grant		50 00	
			254 07
Cr.			
By Balance due Treasurer		50 40	
" Prizes for Live Stock	143 40		
" " Field Products	12 00		
" " Dairy "	3 60		
" " Horticultural Products	5 50		
" " Agricultural Implements	2 40		
" " Arts and Manufactures	10 70		
		177 60	
" Working Expenses		16 62	
			244 62
Balance in hand			9 45

Note.—The fall exhibition was of a satisfactory character: the total number of articles entered amounted to 466.

Thorold.

Dr.	$ cts.	$ cts.	$ cts.
To Members' Subscriptions		102 00	
" Legislative Grant		83 75	
" Municipal Grants		20 00	
			205 75
Cr.			
By Balance due Treasurer		0 66	
" Prizes for Live Stock	137 25		
" " Field Products	16 96		
" " Dairy "	1 37		
" " Horticultural Products	8 84		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	8 42		
	—	175 84	
" Working Expenses		17 30	
			193 80
Balance in hand			11 95

Willoughby.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 77	
" 53 Members' Subscriptions		84 00	
" Legislative Grant		68 67	
			173 44
Cr.			
By Prizes for Live Stock	54 74		
" " Field Products	16 26		
" " Dairy "	0 75		
" " Horticultural Products	3 95		
" " Agricultural Implements	1 75		
" " Arts and Manufactures	5 99		
		83 44	
" Prizes of last year		1 75	
" Working Expenses		10 93	
			96 12
Balance in hand			77 32

WELLINGTON, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		6 55	
" 184 Members' Subscriptions		187 50	
" Legislative Grant		700 00	
" Municipal Grant		150 00	
" Minto Agricultural Society		108 49	
" G. A. Drew, M.P., Donation		30 00	
			1182 54
Cr.			
By Prizes for Live Stock	167 25		
" " Field Products	95 00		
" " Dairy "	38 00		
" " Horticultural Products	6 00		

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Agricultural Implements	61 00		
" " Arts and Manufactures	30 00		
	397 26		
Unpaid	19 50		
		377 75	
" Prizes of Previous Year		13 50	
" Legislative Grant to Township Societies		420 00	
" Preparing Show Grounds		60 00	
" Agricultural Publications		10 50	
" Working Expenses		224 86	
			1106 61
Balance in hand			75 93

REPORT.

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The Directors beg leave to state, that at both the seed fair and the fall show the entries were somewhat less than the previous year 1870, the whole number of entries at both were 642 against 810 in 1870, or a decrease in 1871, of 168; this may be partly accounted for in two ways. *First*, the very meagre show of stallions and bulls at Rougemont on the 28th March, to say nothing of the Seed Fair, which was next to a total failure, there being only ten entries in all, which were made by four exhibitors. The day was fine for the season of the year, but your Directors cannot account for the very poor attendance of farmers and other members of the Society. The show of bulls was good, but of the stallions shown none was considered worthy of a prize. One reason may be adduced for the show of stallions being so poor that many good horses were not brought forward, owing to the condition annexed, to their obtaining a prize, that they were to travel in certain parts of the Riding during the season, some owners preferring to keep their horses home, and not travelling them at all.

The fall show was held at the Village of Harriston, on the 27th September, the day proved wet and sloppy, rain fell at intervals all day, which made it very disagreeable, and prevented not a few intended exhibitors from a distance, from bringing out their stock. The entries, especially roots, were not so numerous as previous years. Horses shown were very good, but cattle, sheep and pigs were the exception indeed were excellent, in fact better than any previous year. Grain and other cereals were good, although not very extensively shown; the great falling off this year was the root crop, which was a poor and miserable show. Dairy products and domestic manufactures although hardly so large as the previous year, were really a good show, and there was a perceptible improvement in agricultural implements and other articles in the mechanical department.

The crops throughout the Riding the past season have, on account of frost and the very dry weather thereafter, been to some extent a failure; the best crop of the season being wheat both spring and fall: in both cases the grain is excellent, plump and heavy, but the straw very short. Other cereals were also in most instances, an average crop, but in all cases very short in straw. Hay has been next to a failure and will not be more than about ¼ of an average crop.

Roots of all kinds, especially potatoes have been very poor. In potatoes, in some cases, the seed has not been returned. The very favourable weather in harvest and fall, enabled the farmer to get his crops secured in good order, so that, if fodder is scarce for wintering stock, it is good, and with proper care may be made to go further than when damaged.

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A R 69

Amaranth.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		20 63	
" 72 Members' Subscriptions		86 00	

	$ cts.	$ cts.	$
Dr.			
To Admissions to Show		14 80	
" Legislative Grant		81 67	
			203 10
Cr.			
By Prizes for Live Stock	88 00		
" " Field Products	28 60		
" " Dairy "	5 25		
" " Horticultural Products	3 00		
" " Arts and Manufactures	28 00		
		152 85	
" Preparing Show Grounds		1 00	
" Working Expense		35 31	
			189 16
Balance in hand			13 94

Arthur.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		25 74	
" Members' Subscriptions		84 50	
" Legislative Grant		69 15	
			179 39
Cr.			
By Prizes for Live Stock	75 00		
" " Field Products	38 25		
" " Dairy	14 75		
" " Agricultural Implements	9 00		
" " Arts and Manufactures	9 50		
		146 50	
" Working Expenses		34 12	
			180 62
Balance due Treasurer			1 23

Luther.

	$ cts.	$ cts.	$ cts.
Dr.			
To Members' Subscriptions		93 50	
" Legislative Grant		73 29	
			166 79
Cr.			
By Prizes for Live Stock	58 00		
" " Field Products	16 75		
" " Dairy "	15 75		
" " Horticultural Products	2 75		
" " Agricultural Implements	6 00		
" " Arts and Manufactures	20 25		
		119 50	
" " Working Expenses		31 62	
			151 12
Balance in hand			15 67

Minto.

	$ cts.	$ cts.	$ cts.
Dr.			
To Members' Subscriptions		101 34	
" Admissions to Show		20 80	

	$ cts.	$ cts.	$ cts.
Dr.			
To Legislative Grant		60 00	
" Miscellaneous Receipts		21 88	
			204 02
Cr.			
By Preparing Show Grounds		196 32	
" Working Expenses		7 70	
			204 02

Note.—The Society united with that of the County for a Union Show.

Peel and Maryborough.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		24 75	
" Members' Subscriptions		91 00	
" Admissions to Show		3 00	
" Legislative Grant		87 40	
			206 15
By Prizes for Live Stock	129 00		
" " Field Products	22 75		
" " Dairy "	7 75		
" " Horticultural Products	1 50		
" " Agricultural Implements	9 50		
" " Arts and Manufactures	8 40		
	178 90		
Unpaid	17 50		
		161 40	
" Prizes of Last Year		24 73	
" Working Expenses		38 89	
			225 02
Balance due Treasurer			18 87

WELLINGTON, CENTRE.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		96 04	
" 201 Members' Subscriptions		203 00	
" Admissions to Show		62 10	
" Legislative Grant		700 00	
" Municipal Grant		150 00	
" Pilkington Society		80 00	
" Miscellaneous Receipts		6 10	
			1297 24
Cr.			
By Prizes for Live Stock	286 50		
" " Field Products	97 50		
" " Dairy "	36 00		
" " Horticultural Products	15 00		
" " Agricultural Implements	39 00		
" " Arts and Manufactures	62 00		
" " Ploughing Match	30 00		
	566 00		
" Unpaid	73 75		
		492 25	

Cr.	$ cts.	$ cts.	$ cts
By Prizes of Last Year		47 50	
" Legislative Grant to Township Societies		357 66	
" Preparing Show Grounds		12 26	
" Working Expenses		183 26	
			1092 93
Balance in hand			204 31

REPORT.

The Directors of the Centre Wellington Agricultural Society in presenting their Fourth Annual Report have much pleasure in being able to congratulate the members upon the prosperous position of the affairs of the Institution. The Agriculturists of this section appear to be annually more anxious to support County and District than Township Exhibitions.

Last year, the Township of Nichol Society, one of the oldest in the County, was not even organized, and its proportion of the Public Grant was in consequence apportioned amongst the Township Societies that complied with the provisions of the Statute. The Pilkington Society amalgamated with this Society and your Directors were enabled to offer premiums to the amount of $666·00 ; the sum of $536·00 at the Fall Exhibiton and $30·00, at the Ploughing Match. In addition to the cash prizes, James Ross, Esq. M.P., presented a handsome silver cup to the best ploughman, and Charles Clarke, Esq M.P.P. presented a cup of equal value to the best ploughboy. The Ferrier silver medals were also competed for and awarded according to the terms on which they were granted. The Match was hold in the Township of Nichol on the 28th October last, and was well attended by both competitors and spectators, the handsome special prizes, no doubt, contributed not a little to its success.

The Exhibition was held in Elora on 21st and 22nd days of September last, and was in many respects the best ever held under the auspices of the Society. There is evidently a marked improvement each succeeding year in the quality of the Live Stock brought out to these shows, and the grain shewn last fall was very much superior to that exhibited in 1870. Even the roots, notwithstanding the unprecedented dry season, were very little behind the samples brought out in previous years.

Your Directors in their last Annual Report alluded to a proposition for holding a "Central Exhibition" in the Town of Guelph. This Exhibition was held under the auspices of the South Wellington Agricultural Society, and was a greater success than its most sant guine promoters could have anticipated, and reflected a great deal of credit on the efficien- and indefatigable managers.

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Eramosa.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		36 91	
" 138 Members' Subscriptions		159 00	
" Legislative Grant		76 39	
" Miscellaneous Receipts		5 00	
			277 30
Cr.			
By Prizes for Live Stock	90 00		
" " Field Products	20 50		
" " Dairy "	15 50		
" " Horticultural Products	10 50		
" " Arts and Manufactures	24 50		
" " Ploughing Match	31 75		
		192 75	
Working Expenses		23 25	
			216 00
Balance in hand			61 30

REPORT.

Your Directors feel gratified in rendering you this year's report, inasmuch as there was an increased interest manifested in the Annual Township Exhibition, the subscription list was larger, and there were one hundred and thirty more entries than last year, and the show taken altogether may be said to have been more successful than for several years previous.

The hay crop throughout the Township was very light, but notwithstanding the extreme drought that prevailed for so many months and the frequent frosts, the grain crop on the whole has been good, especially fall wheat and barley.

The dryness of the season affected the roots and vegetables also; the turnips, however, although not so large as on some former years, were very sound and good, and were gathered in most excellent condition.

The ploughing match in connection with the Society, took place on the 7th of November in a field of Alexander McQueen, Esq. There was a greater number of competitors than for some years previous and although the ground was unusually dry, most of the work was very well done.

* * * * *

Erin.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		103 47	
" 257 Members' Subscriptions		257 50	
" Admissions to Show		200 50	
" Legislative Grant		140 00	
			701 47
Cr.			
By Prizes for Live Stock	255 50		
" " Field Products	78 00		
" " Dairy "	25 00		
" " Horticultural Products	14 50		
" " Agricultural Implements	30 50		
" " Arts and Manufactures	55 50		
" " Ploughing Match	45 00		
		504 00	
" Preparing Show Grounds		15 30	
" Working Expenses		108 61	
			627 91
Balance in hand			73 56

Garafraxa, East.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		25 05	
" Members' Subscriptions		130 00	
" Admissions to Show		28 85	
" Legislative Grant		75 42	
" Municipal Grant		110 00	
" Subscription for Hall		197 96	
			567 28
Cr.			
By Prizes for Live Stock	150 00		
" " Field Products	28 50		
" " Dairy "	9 75		
" " Horticultural Products	9 50		

	$ cts.	$ cts.	$ cts.
Cr.			
By Prizes for Agricultural Implements	10 10		
" " Arts and Manufactures	26 60		
	234 75		
Unpaid	41 25		
		193 50	
" Exhibition Building		307 96	
" Working Expenses		38 50	
			539 96
Balance in hand			27 32

REPORT.

The Directors of the East Garafraxa Agricultural Society, in presenting this, their third annual report, congratulate the members on the very satisfactory condition of the Society during the past year. The Society's fall exhibition of 1871, was held in Mareville, on Friday, the sixth day of October. The number of entries was very large amounting in all to 712, being 150 more than last year. The articles exhibited were of excellent quality. Taking into consideration the dry season, the grain and roots were excellent. Some of the grain exhibited here, taking prizes at the central exhibition. In the class of cattle there was a marked improvement on former years. In the class of fruit the exhibition was very good, both as regards quality and quantity, the entries in apples alone numbering 34.

In the ladies' department the display was also very good. Your Directors are happy to congratulate the members on the erection of so commodious a hall, which is, no doubt, a credit to the Society.

* * * * *

Garafraxa, West.

	$ cts.	$ cts.	$ cts.
Dr.			
To Members' Subscriptions		118 00	
" Legislative Grant		65 60	
			183 60
Cr.			
By Balance due Treasurer		2 96	
" Prizes for Live Stock	82 50		
" " Field Products	25 40		
" " Dairy "	10 25		
" " Horticultural Products	3 50		
" " Agricultural Implements	11 50		
" " Arts and Manufactures	20 60		
		53 75	
" Working Expenses		31 04	
			187 75
Balance due Treasurer			4 15

Pilkington.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		37 20	
" 80 Members' Subscriptions		80 50	
" Legislative Grant		49 05	
			166 75
Cr.			
" Paid Treasurer of County Society for Union Show		129 05	
" Working Expenses		24 10	
			153 15
Balance in hand			13 60

WELLINGTON, SOUTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		271 94	
" 837 Members' Subscriptions		1112 50	
" Admissions to Show		4465 11	
" Legislative Grant		700 00	
" Municipal Grant		3550 00	
" Special Prizes		155 00	
" Rent of Booths		285 00	
" Rent of Stalls, &c.		237 94	
" Guelph Township Society		224 00	
			11001 49
Cr.			
By Prizes for Live Stock	2732 00		
" " Field Products	358 00		
" " Dairy "	190 00		
" " Horticultural Products	487 00		
" " Agricultural Implements and Cabinet Ware	368 00		
" " Arts and Manufactures	861 00		
" " Musical Instruments	118 00		
" " Carriages	173 00		
" " Bands	225 00		
		5512 00	
" Exhibition Buildings and Fencing		2845 00	
" Working Expenses		2363 43	
			10720 43
Balance in hand			281 06

REPORT.

The Directors of the South Riding of Wellington Agricultural Society in making their Annual Report beg to call the attention of the members to the success of their first attempt to establish a CENTRAL EXHIBITION in this County.

The year 1871 will ever be an eventful one in the history of Guelph, as also in that of the South Wellington Agricultural Society, and your Directors have much pleasure besides placing before you a detailed statement of facts, to report that the joint efforts of the Town and County for establishing a Central Show have resulted in a grand success, more than even the most sanguine could have contemplated: and it only remains for the same united action for the future as in the past to render the Annual Exhibition equal to the Provincial one, and in fact it will enable you to make a just claim for a share of the honour of holding at no distant day the Provincial Exhibition in the Town of Guelph.

Your own Exhibition, like all other undertakings ushered into existence on the spur of the moment, is capable of many alterations and improvements, and it behoves the well-wishers of the County of Wellington to be up and doing, so that any shortcomings and deficiencies that have occurred may be remedied in the future, and there is but little doubt that by liberal support from the County at large we may not only be styled the "*Smithfield*" of Canada, but may approach, without boasting, the success and importance of the Royal Agricultural Society of England. Meetings were called for the purpose of considering the question, at which leading merchants and others of the Town attended, all anxious to see the Exhibition established, if possible this year, thinking that as the Provincial Exhibition was to be held in Kingston we would stand a better chance of securing a larger competition from that fact, as many of our breeders object to taking their stock so far from home, entailing heavy expenses and great risk to their cattle.

After a great deal of discussion on the subject as to raising the ways and means, the members of the Town Council agreed to purchase the land (a most eligible spot having been

offered them) and put up a portion of the necessary buildings, hoping that the County Council would see fit to assist them: but that honourable body not clearly seeing their way to an expenditure for such a purpose, did not at that session vote any sum, and the whole burden devolved on the Town. But to the honour of those gentlemen who so strongly advocated the measure, a sufficient amount was placed in the hands of the Central Exhibition Committee to enable them to carry out the original design.

At the June session of the County Council the matter was again brought before them, and after mature and careful consideration resolved that the undertaking was worthy of all encouragement and most cordially appropriated the handsome sum of $3,000 for the promotion of the Central Exhibition, and the Directors cannot too strongly commend the action of that honourable body in thus coming so practically to the aid of this most important enterprise. The piece of land purchased for the purpose is most eligible in every respect, being adjacent to the town and a short distance from the railway stations; it comprises 33 acres and is well fenced with boards eight feet high. The land is dry with a gravelly subsoil, rendering it in every way fit for exhibition purposes. The buildings erected on the ground are:—First, the main hall, which is a substantial building. The centre is octagon, measuring 83 feet, with four wings 60 x 40 feet each, making in the whole over 200 feet each way, the gallery above the octagon is a spacious one, and affords great facilities for the exhibition of fine arts, &c. The whole building is well lighted, and possesses every means necessary for ingress and egress.

On the south side of the grounds are the horse stalls, covering a space of 600 feet, and divided into 87 double and single stalls. Immediately opposite is the ring, measuring a quarter of a mile round, and fenced with posts and rails spiked on the top; there is also a Judges' stand in the centre, affording every facility for examining the animals as they are driven round the enclosure.

On the east side of the ring is a gradual rise, terminating in a level plateau, enabling a large number of spectators to see all the animals exhibited without the annoyance of being nearly crushed to death in their endeavours to do so.

On the north are the cattle sheds, covering a space of 900 feet, divided into stalls, with rings necessary for showing the animals in front.

To the east are the poultry pens, the building for which is 100 feet long by 14 wide, and contains 150 coops for the different classes of fowls.

The sheep and pig pens are situated in the centre of the grounds to the west of the main building; they are about 500 feet long, divided off into pens suitable for the different classes. Close to those is a building 100 feet long, for grain and roots, and another of the same dimensions for implements, &c., &c., altogether making a very creditable amount of accommodation, especially considering the disadvantages which the committee were under.

In taking a retrospective view of the exhibition, your Directors cannot refrain from stating that their efforts were crowned with that measure of success, which must be most gratifying to all concerned in carrying out the undertaking.

The number of horses entered in the different classes are as follows:—

Blood horses, 18; agricultural, 129; road and carriage, 118; heavy draught, 83; total, 348.

We cannot say much in praise of the blood horses, and are convinced that unless a better class of these animals is introduced into the country, having more bone and symmetry, they will do little good towards improving the breed here.

In agricultural horses there was a good display, especially in aged stallions, brood mares and matched teams; in the younger classes there was not so much competition, but some promising young animals were among them.

In road and carriage horses there was keen competition, and although the number of aged stallions was not large, yet some valuable animals were shown in this class, Mr. Buckland carrying off first honours with his imported horse, British Champion.

Some of the young animals showed great promise, and we have no doubt will turn out valuable horses. In matched carriage teams there was a good display, although not as many as we might reasonably have expected, considering the handsome prize of $100, offered by J. B. Armstrong Esq., of Guelph.

There were 26 entries in this class, and among them some handsome spans; the first prize was won by David Murray, of Halton. The show of heavy draught horses was not as large as in the preceding classes, but some noble animals were in the ring, especially

the aged stallions, some of which were very fine specimens of the Suffolk and Clyde breeds, Mr. John Kemp, of Weston, County of York, carried off the first prize. The horse that gained the Diploma as the best in any class is a fine promising animal, and was imported and now owned by Andrew Harvey, of Beverly.

In Durham cattle the show was second to none held in the Province, and a finer display of this noble breed could scarcely be found. They were well represented in all classes, the number entered being 177, 25 more than were shown at the Provincial Exhibition in Kingston. Our exhibition taking place after the Provincial, London, and Hamilton ones, where many of the same cattle had been competing against each other, it became a matter of great anxiety to the principal breeders, as to who should come off the final winner, and we must congratulate Messrs. Snell and Son on their success, for they carried off the highest honours, and most of them.

The entries of Herefords, Devons, and Galloways, though not large in numbers, yet the cattle were quite up to the mark in quality, as some of the finest animals of all these classes owned in the Province were on exhibition.

Only 19 Ayrshires were entered, and we cannot say there was much to admire in any of them, although for dairy purposes we believe they are a profitable breed; but when put beside any of the other pure breeds, and compare their symmetry and aptitude to fatten, they cut a sorry figure.

There was a splendid lot of grades shown, there being 75 entries. Many among them, if they had pedigrees, would be considered first-class Durhams, their size and appearance being such as to deceive the best judges. When we find that most of the competitors belong to this County, it is not to be wondered at that there was a fine show, as our farmers have had every opportunity to improve their stock.

In fat cattle there were 31 entries, some of them had taken prizes before at Kingston and Hamilton, so there was keen competition in most classes, except the one for steers under four years. There J. S. Armstrong, Esq., took all the honours, and most deservedly so, as a better lot could not be found in the Dominion.

The show of fat sheep, though not large, there being 21 entries, was well up in quality. The principal exhibitors were from this locality.

The show of sheep of all classes was good. In Cotswolds there were 72 entries, and we feel it unnecessary to say more than they were a fine lot of sheep, many of them having taken prizes at most of the leading exhibitions during this and the preceding year.

There was a large display of Leicesters, the entries numbered 150; in nearly every class there was keen competition, especially so between rams and ram lambs. The show of South Downs was good, 62 being entered, and among them some very handsome specimens, but they do not stand so high in the estimation of the farmers as the long wooled sheep, owing to their being small in comparison, and the fleece much lighter, and the wool but a trifle dearer than the Cotswold or Leicester, either of which will clip nearly double the quantity. Latterly, however, the feeling seems somewhat changed as regards the manufacturers, as more enquiry is made after this class of wool.

There was a large show of pigs, the pens being full, and many had to leave them in the cages they were brought in: 219 were entered. The large breeds were not as well represented as either the Suffolks, Berkshires or Essex; in fact the smaller breeds are considered more profitable, as they take less to fatten, and come to maturity earlier. Another reason is the demand for heavy pork has fallen off, and hogs that weigh from 110 to 200 well fattened, will command as high a price as those of 300 to 400 weight.

The display of poultry was truly splendid; like the pigs there was scarcely room for the numerous entries, which numbered 306. The competition in every class was spirited and close. It would take up too much space to enter into a full description of the prize birds in the different classes, and to particularize, by naming a few, would be invidious: we will end this part of our report by saying a better lot of poultry has scarcely ever been shown at any previous exhibition in this Province.

In class 21, grain, seeds, hops, &c., there were 470 entries, 156 of which were wheat. The samples of all varieties were excellent, more especially the fall wheat, which was better than we have seen for some years, Peas, barley and oats were also good; there was a large show of small field peas, no less than 52 bags being entered; barley very good, and owing to the fine dry harvest, was of a beautiful colour and fair sized berry. There were 50 bags

white oats entered, but black and Norway varieties did not come up in quantity, although there were some fine samples shown.

The show of roots, on the whole, was good, (although some varieties were not up to the mark), more especially the potatoes, which numbered some 318 entries of all varieties; garnet chillies seem to be the favourite, if we may judge from the number entered, there being 71 samples on exhibition. Turnips and mangolds were not as good as we have been accustomed to see, owing to the exceeding dry weather during the summer. Some samples of carrots were very fine, especially the white Belgian.

There was a fine display of fruit, taking into consideration the late period of the season. The principal feature in this department was the apples, of which there was a large number of entries, comprising all the best varieties grown: 400 samples competed for the prizes in the different classes.

Pears were also well represented, and the samples excellent. There were 143 entries. This may be considered very good, when we remember that at that time nearly all the early fall pears are gone. There was also a good display of grapes, both hothouse and open air varieties.

Garden vegetables were good, especially carrots and beets, which the judges pronounced magnificent samples.

The show of dairy produce was far beyond our most sanguine expectations, especially in butter, of which there were the large number of 257 entries. In Sec. No. 1, best firkin, not less than 100 lbs., 52 competed, but by far the most spirited competition took place for the prizes offered for the best 15 lbs. in crocks and 10 lbs. in baskets, there being 175 entries in both classes. Then the liberal prizes offered by Messrs. Brill, McKenzie and Risk, for the best 5 and 4 firkins fit for exportation, brought out some of the largest makers, there were 12 lots in each section, making a total of 108 firkins. The entries of factory cheese were not numerous, but the quality was good, the same may be said of Stilton and Dairy.

Class 28 and 29. Agricultural implements worked by horse or steam power. Agricultural tools and implements for hand use.

In this department there was a splendid show of all kinds of farming implements and tools, and it was the general remark of all, that a better display had scarcely been seen at any exhibition in Canada.

Class 31 was well filled with first-rate specimens of carriages, sleighs, &c., &c. Messrs. Armstrong & Bruce, of Guelph, and J. P. Trowzey, of Hamilton, being the most successful competitors.

The fine arts department was well filled, both in the professional and amateur lists, many of our first artists sending their best paintings and drawings for competition.

In all classes of ladies' work the show was a great success, nearly 700 entries being made—this testifies to the great interest taken in this department by the ladies.

Class 39. Sewing machines. As usual in this department there was a very keen contest between the different establishments represented, each eager to carry off the much coveted prize. Of late years great improvements have been made in this very useful domestic machine, and each "manufacturer" puts forth his claim as having the best one in use, consequently, when they meet for competition, every effort is made to establish the claim.

Class 41. Musical instruments. In this class the principal competition was in organs and melodions, there being only a few pianos shown. In the former sections, however, there was a fine collection of handsome, well finished instruments, which gained for the makers well merited commendations. The principal exhibitors were Messrs. Bell & Co. and McLeod, Wood & Co., who have gained many prizes at all exhibitions of late years, both in this and the sister Province of Quebec, and have established for themselves a name that will ensure success in their manufacture.

The other parts of the exhibition were pretty well filled, and, on the whole, we may congratulate the members on the success attending this their first attempt to hold a Central Exhibition.

Guelph.

Dr.	$ cts.
To Balance in hand.....	12 30

Dr.	$ cts.	$ cts.
To 157 Members' Subscriptions	204 00	
" Canada Company, Donation	20 00	
		236 30
" Amount paid Treasurer of County Society	236 30	
		236 30
		0 00

Note.—This Society united with that of the County for the sustentation of the Central Exhibition.

Puslinch.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		93 48	
165 Members' Subscriptions		178 50	
" Admissions to Show		00 45	
" Legislative Grant		128 77	
			401 20
Cr.			
By Prizes for Live Stock	140 50		
" " Field Products	44 50		
" " Dairy "	18 00		
" " Horticultural Products	17 50		
" " Agricultural Implements	7 00		
" " Arts and Manufactures	18 50		
		246 00	
" Preparing Show Grounds		6 00	
" Working Expenses		74 28	
			326 28
Balance in hand			74 92

REPORT.

The Directors, in presenting their report for the past year, would congratulate the members on the very flattering position held at present by the Society as the report of the Auditors fully shows, although the excessive drought of the past season has told severely upon this township. Yet all our crops have done remarkably well, nearly up to the standard of former years. The fall wheat, especially as regards quality and yield was much better than we have had for a number of years. Peas have also done well, about an average crop. Oats and barley have been below the average, with the exception of those sown on low, moist ground. Hay, owing to the excessive dry weather, has been light, but of superior quality. Potatoes, although the yield was not so large as in former years, the quality has been very good. Mangolds and carrots have been far below the usual average. Turnips have been very good when we consider the disadvantages they had to contend with. The general show held in the Agricultural Hall and show grounds, on the 3rd October last, was very successful; every class was well represented with the exception of working horses; it seems that American gold has enticed our farmers to part with their best horses, but by the appearance of the young animals shown, the township will, ere long, be up to its former standard of excellence in this class.

* * * *

Guelph Horticultural Society.

Dr.	$ cts.	$ cts.
To Balance in hand	14 42	
" 163 Members' Subscriptions	164 00	
" Admissions to Show	69 33	
" Legislative Grant	131 95	
		379 70

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Fruits	60 00		
" " Plants and Flowers	134 00		
" " Vegetables	86 75		
		280 75	
" Working Expenses		77 70	
			358 45
Balance in hand			21 25

REPORT.

The Directors of the Guelph Horticultural Society have nothing special to call the attention of the members to during the past year, but are happy to say that the Society is still in a progressive state.

* * * * *

The first show was held, on Wednesday the 28th June, at which a very good display of Horticultural Productions was made. Your Directors were much pleased to see an increase in the number of window plants shown, and hope another year to see a still larger increase in that department.

The display of Fuschias, Geraniums, &c., was good, and called forth the commendation of the Judges, as will be seen by their remarks.

Bouquets and cut flowers, such as roses, pansies, sweetwilliams, petunias, &c., also very fine.

In fruit the show did not come up to our expectations, especially in strawberries, of which we generally have a large display of magnificent fruit, owing to the unfavourable weather and other causes, the show was small, and the samples inferior. Other small fruits were pretty well represented.

In vegetables the show was superior to any previously held at this season of the year, especially, potatoes, peas, and cucumbers. The report given by the Judges will convey an idea of what they thought of it :—

"The Judges have pleasure in noticing a box of seedling Petunias which are very fine. They have also much pleasure in congratulating the Directors on the success of the Exhibition. In plants the Fuschias are good, Geraniums and Petunias, Roses, Pansies, Sweetwilliams, and Dianthus, very fine and very choice stock. In vegetables, peas and potatoes are superb, the whole are excellently arranged and reflect great credit on the management."

(Signed.) CHAS. MESTON,
D. MURRAY,
A. W. TAYLOR.

The Fall Show was held on the 12th of September, and owing to the unusually dry season was not as good a display as we might look for on these occasions. Still our members did their best to keep up the credit of the Exhibition. The show of greenhouse and window plants was about equal to previous fall exhibitions, but the display of geraniums far surpassed anything in that class ever shown before; especially the collection of zonale or tricolor geraniums, which is a new feature in our show.

In cut flowers and bouquets the display was good, considering the fearfully dry and hot summer,—in fact, much better than could be reasonably expected under the circumstances. In fruit the show was fine. Plums (although not as numerous as we have seen them) were exceedingly good. In pears the display was better than we have seen before; many specimens the Judges pronounced very good indeed. This fruit has largely increased in this country of late years, and we feel convinced, that with good healthy trees to start with, and proper care in cultivation after, the pear can be grown here with reasonable success. Some varieties do not grow here as well as in other localities, but many of the best sorts do well. Such, for instance, as the Bartlett, Louise Bonne de Jersey, Flemish Beauty, Howell, Duchesse d'Angouleme, Beurre Diel, &c. Apples did not make as good a show as usual, owing, in a great measure, to the dry season, and the ravages of the codlin moth. This pest seems to be on the increase here, and its depredations on our orchards are having a marked effect on our apple crop, some varieties being almost useless, on account of the worm in the fruit. Many ex-

periments have been tried for their destruction, but few have had marked success, and until they (like many other pests that trouble the fruit-grower and farmer) pass away westward, we must not look for a very fine or abundant crop of apples.

Vegetables are not as good as we generally see at our fall shows, nor could they be expected to be, after such a dry season. But still, some are worthy of remark, especially parsnips and onions, which, we think, were never better. The number of entries do not come up to those of last year, although they compare favourably with previous ones.

The following is the Judges' report:—

"Your Judges, in handing in the awards of prizes, beg to express their satisfaction at, and congratulate you upon, the display of fruits, flowers and vegetables this day shown at your Exhibition, which, considering the unfavouaable dry season, is certainly creditable to the producers. In fruits, the plums shown we believe cannot be excelled in any part of the Province, whilst many specimens of pears are very good indeed. In flowers, the display was better than could be expected by the most enthusiastic. Particular mention may be made of a collection of annuals, a collection of Stocks, Asters, and Zinias,—and also what we believe to be a new feature in your Exhibition, a collection of tri-colour geraniums, some of the specimens of which are rare and unique. Vegetables are not quite up to the mark, which cannot be wondered at. In fact, considering the season, we doubt if better can be shown this year at any local show, where want of rain has prevailed to such an extent as in the neighbourhood of Guelph. Celery, parsnips and onions, were especially worthy of commendation."

E. G. Townsend.
James Goldie.
Geo. Leslie.
W. C. Lowe.

WENTWORTH, NORTH.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand	201 72		
" Members' Subscriptions	234 40		
" Legislative Grant	700 00		
" Municipal Grant	200 00		
" From Treasurer of Central Fair	488 14		
			1824 26
" Legislative Grant to Township Societies	392 32		
" Paid Treasurer of Central Fair	865 00		
" Agricultural Publications	11 50		
" Working Expenses	36 30		
			1335 12
Balance in hand			489 14

Note.—This Society, united with those of Hamilton and South Wentworth, for the purpose of a union exhibition.

Beverley.

Dr.	$ cts.	$ cts	$ cts.
To Balance in hand		25 42	
" 164 Members' Subscriptions		168 00	
" Legislative Grant		131 44	
" Municipal Grant		25 00	
" Miscellaneous Receipts		11 50	
			361 36
Cr.			
By Prizes for Live Stock	126 25		
" " Field Products	38 25		
" " Dairy "	13 50		
" " Horticultural Products	4 25		
" " Agricultural Implements	6 00		

	$ cts.	$ cts.	$ cts.
Cr.			
By " Arts and Manufactures	25 00		
" " Ploughing Match	19 00		
		232 25	
" Paid Grant to former Treasurer		20 00	
" Working Expenses		58 60	
			312 85
" Balance in hand			48 51

Flamborough, East.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		35 87	
" 114 Members' Subscriptions		190 50	
" Admissions to Show		30 10	
" Legislative Grant		140 00	
" Municipal Grant		50 00	
			446 47
Cr.			
By Prizes for Live Stock	187 50		
" " Field Products	63 00		
" " Dairy "	16 00		
" " Horticultural Products	16 50		
" " Agricultural Implements	4 00		
" " Arts and Manufactures	19 00		
		306 00	
" Preparing Show Grounds		15 59	
" Working Expenses		76 87	
			398 46
Balance in hand			48 01

Flamborough, West.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		63 88	
" Members' Subscriptions		150 50	
" Admissions to Show		62 00	
" Legislative Grant		120 88	
" Municipal Grant		40 00	
			437 26
Cr.			
By Prizes for Live Stock	145 00		
" " Field Products	70 00		
" " Dairy "	9 00		
" " Horticultural Products	18 75		
" " Agricultural Implements	17 50		
" " Arts and Manufactures	49 25		
		309 50	
" Preparing Show Grounds		18 00	
" Working Expenses		72 74	
			400 24
Balance in hand			37 02

WENTWORTH, SOUTH.

	$ cts.
Dr.	
To Balance in hand	127 35
" 163 Members' Subscriptions	278 80
" Legislative Grant	700 00

	$ cts.	$ cts.
Dr.		
To Municipal Grant	200 00	
" Treasurer of Central Fair, proportion of balance	481 40	
		1787 55
Cr.		
" Legislative Grant to Township Societies	376 85	
" Treasurer Central Fair	853 36	
" Agricultural Publications	72 00	
" Working Expenses	52 65	
		1354 86
Balance in hand		432 69

Note.—The Directors report that the Society united with the North Riding and Hamilton Societies for the purpose of a Union Show, which was eminently successful.

Ancaster.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		60 52	
" 133 Members' Subscriptions		140 00	
" Admissions to Show		23 23	
" Legislative Grant		123 17	
" Municipal Grant		50 00	
" Miscellaneous Receipts		15 13	
			412 05
Cr.			
By Prizes for Live Stock	167 00		
" " Field Products	45 25		
" " Dairy "	17 00		
" " Horticultural Products	33 00		
" " Agricultural Implements	5 50		
" " Arts and Manufactures	32 50		
		300 25	
" Preparing Show Grounds		21 86	
" Working Expenses		62 76	
			384 87
Balance in hand			27 18

Barton & Glanford.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		44 18	
" Members' Subscriptions		112 00	
" Admissions to Show		14 00	
" Legislative Grant		113 68	
" Municipal Grant		50 00	
" Special Prizes		10 75	
			344 61
Cr.			
By Prizes for Live Stock	172 50		
" " Field Products	35 00		
" " Dairy "	8 25		
" " Horticultural Products	24 00		
" " Agricultural Implements	3 00		
" " Arts and Manufactures	16 50		
		259 25	
" Working Expenses		60 51	
			319 76
Balance in hand			24 85

Saltfleet & Binbrook.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		22 47	
" 190 Members' Subscriptions		194 00	
" Admissions to Show		31 10	
" Legislative Grant		140 00	
" Municipal Grant		45 00	
			432 57
Cr.			
By Prizes for Live Stock	185 50		
" " Field Products	57 25		
" " Dairy "	15 75		
" " Horticultural Products	21 00		
" " Agricultural Implements	9 75		
" " Arts and Manufactures	41 25		
		330 50	
" Working Expenses		55 90	
			386 40
Balance in hand			46 17

YORK, NORTH.

	$ cts.	$ cts.	$ cts.
Dr			
To Balance in hand		228 89	
" Members' Subscriptions		305 00	
" Admissions to Show		423 29	
" Legislative Grant		700 00	
" Municipal Grant		150 00	
" Donations for Prizes		75 00	
" Proceeds of Excursion		51 93	
			1934 11
Cr.			
By Prizes for Live Stock	397 75		
" " Field Products	105 00		
" " Dairy "	73 00		
" " Horticultural Products	31 50		
" " Agricultural Implements	65 50		
" " Arts and Manufactures	93 30		
		766 05	
" Legislative Grant to Township Societies		499 90	
" Preparing Show Grounds		20 00	
" Purchase of Grounds, &c		218 00	
" Working Expenses		134 34	
			1638 29
Balance in hand			295 82

REPORT.

* * * * *

The measure of prosperity attending the North York Agricultural Association during the past year affords ample room for congratulation. Your Directors are pleased in being able to report that, notwithstanding the adverse circumstances of an unfavourable year, the list of members stands about the same as the previous year; and although the past summer farmers experienced an unusual drought, yet the Fall Exhibition was very successful, and the net proceeds quite up to the amount realized the preceding year, although the first day we experienced very unfavourable weather.

The number of entries in the various classes were as follows:—

Horses	196
Cattle	80
Sheep	82
Swine	55
Poultry	70
Grain and seeds	146
Fruits, roots, vegetables, &c	249
Dairy produce	73
Domestic manufactures	120
Implements and manufactures	108
Fine Arts and decorations, &c	141
Total	1,320

It will be seen, by the foregoing schedule, that very general interest was manifested in every branch of the Exhibition.

No doubt the drouth experienced last summer caused considerable falling off in competitors in the various classes of root crops; and likewise militated against stock attaining the usual standard of excellence, thereby preventing many from competing who otherwise would have done so. Taking these circumstances into account, the late Fall Exhibition may be regarded as having been more than usually successful.

Your Directors regret to report the appearance, in some sections of the County, of the Colorado potato bug; but no serious consequences were experienced the past year. They are apprehensive, however, that great care and vigilance will be required the coming season to preserve the potato crop from its ravages, judging from reports of its rapid increase in other sections wherever it has appeared.

Your Directors also have to report the appearance of the Apple Worm in the fruit crop, to a much greater extent than was manifested the previous year, possibly owing also to the drouth.

It is with satisfaction your Board can report that the Messrs. Bray have imported two excellent stallions into the district; and we take the present opportunity of congratulating those gentlemen on the favourable impression of the farming community upon the excellency of the animals thus imported. Their appearance at the last Fall Exhibition added much to the interest of that meeting.

During the year, with the funds on hand, your Directors suggest the balance of the debt on the original purchase of grounds be met; and by economy and judicious management, they consider the sum borrowed, $300, to complete the purchase of the house and lot on the south-west corner, may be paid for next year, and the entire premises will then be free.

It has been suggested that permanent sheds and stables for stock should be erected. If this should be determined upon, your Board are of the opinion arrangements could readily be made for all the funds necessary, at reasonable interest.

Reports from Township Societies in the Electoral District have been received; but there is nothing particular in them reported of general interest. Your Board notice with satisfaction, that they report uniform prosperity; but, notwithstanding this, your Directors still maintain the opinion that too many shows are held in close proximity to each other to be marked successful, and believes one or more unions with the County Society would meet with general favour. Local influence heretofore has prevented the consummation of this desirable object for exhibitors. By a union of interests increased prizes could be awarded, and time and expenses of exhibition saved; but your Board has no desire to precipitate matters in this direction. If a union be entered into, it must receive general and hearty concurrence to prove mutually beneficial; and without this concurrence, your Board would not feel disposed to recommend its formation.

* * * * *

Georgina and N. Gwillimbury.

Dr.	$ cts.	$ cts.
To Balance in hand	63 16	

	$ cts.	$ cts.	$ cts.
Dr.			
To 77 Members' Subscriptions		77 00	
" Admissions to Show		9 00	
" Legislative Grant		70 00	
			219 16
Cr.			
By Prizes for Live Stock	79 00		
" " Field Products	31 50		
" " Dairy "	10 25		
" " Horticultural Products	16 00		
" " Agricultural Implements	15 00		
" " Arts and Manufactures	17 50		
		164 25	
" Working Expenses		26 75	
			191 00
Balance in hand			28 16

Note.—The Directors state with regret that the Society is not so prosperous as it ought to be, and complain of apathy and want of emulation among the farmers and others of the Township. The Exhibition evinced no improvement in any important respect.

Gwillimbury, East.

	$ cts.	$ cts.	$ cts.
Dr.			
To Balance in hand		34 00	
" 91 Members' Subscriptions		92 00	
" Legislative Grant		81 90	
" Miscellaneous Receipts		2 70	
			210 60
Cr.			
By Prizes for Live Stock	84 50		
" " Field Products	33 75		
" " Dairy "	6 00		
" " Horticultural Products	3 25		
" " Agricultural Implements	7 00		
" " Arts and Manufactures	18 75		
		153 25	
" Working Expenses		39 45	
			192 70
Balance in hand			17 90

REPORT.

The confining of exhibitors to residents of the Township still meets with general approval. The Society held its usual fall exhibition, and although the entries were not so numerous as in some past years, yet the quality of articles was superior, and bespeaks a constant improvement in the agriculture of the Township.

A special improvement in cattle and sheep has also taken place, and the interest in horses has increased, resulting in the importation of two draught stallions. Spring crops generally light, owing to drought, but in quality they were a full average.

King.

	$ cts	$ cts.
Dr.		
To Balance in hand	260 00	
" Members' Subscriptions	181 00	
" Legislative and Municipal Grants	171 00	
" Miscellaneous Receipts	43 75	
		595 75

Cr.	$ cts.	$ cts	$ cts.
By Prizes for Live Stock	246 50		
" " Field Products	36 50		
" " Dairy "	16 00		
" " Horticultural Products	19 50		
" " Agricultural Implements	25 00		
" " Arts and Manufactures	37 75		
		381 25	
" Amount overdrawn of County Society		45 00	
" Working Expenses		31 55	
			457 80
Balance in hand			137 95

Note.—The total number of articles entered in the fall show was 689. The live stock was, on the whole, of an improved quality; the implement department was deficient; grain and roots better than was anticipated from the extreme dryness of the season.

Whitchurch.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		223 58	
" 206 Members' Subscriptions		206 00	
" Admissions to Show		198 35	
" Legislative Grant		177 00	
" Miscellaneous Receipts		46 00	
			850 93
Cr.			
By Prizes for Live Stock	261 25		
" " Field Products	32 00		
" " Dairy "	8 50		
" " Horticultural Products	11 50		
" " Agricultural Implements	22 00		
" " Arts and Manufactures	43 25		
" " Growing Crops	18 00		
	396 50		
Unpaid	34 75		
		361 75	
" Prizes of previous year		17 33	
" Overdrawn from County Grant		45 00	
" Working Expenses		102 04	
			526 12
Balance in hand			324 81

REPORT.

The Directors in presenting their Annual Report beg to express their gratitude to Him, who rules the destinies of nations, for one of the most bountiful harvests with which the agriculturalists have been rewarded for their labour.

While famine has reduced the population of a distant nation, and the ravages of fire have laid waste rural districts, towns and cities, this section has been blessed with peace and plenty.

Your Directors report that, in obedience to a resolution passed at the last Annual Meeting, but one show was held in the past year; which show took place in Stouffville on the 10th day of October and was one of the most successful exhibitions held by the Society. As a compromise to allow outside competition the Directors decided not to allow competitors to make more than one entry of animals of the same description, which divided the prizes

among competitors, giving an unusual amount of satisfaction to the parties concerned. All the classes were well represented with the exception of Agricultural Implements.

The show of horses was good, and the cattle, sheep and swine on exhibition, were animals of a superior quality.

The grain and seeds were excellent, and roots were of a medium quality. The roots shown, in the field, were below an average of other years.

Horticultural productions were reasonably well represented, and the show of fruit is a proof of the adaptability of the Canadian climate for orchard culture.

The Domestic Manufactures, added to the ladies' work, contributed much to the interest of the show.

YORK, EAST.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		204 36	
" 121 Members' Subscriptions		324 00	
" Admissions to Show		917 10	
" Legislative Grant		700 00	
" Municipal Grant		125 00	
" Proceeds Rents of Booths, Stables, &c		136 00	
" Markham Society for Union Show		365 00	
" Donations		199 00	
			2970 49
Cr.			
By Prizes for Live Stock	1070 00		
" " Field Products	64 50		
" " Dairy "	94 50		
" " Horticultural Products	53 00		
" " Agricultural Implements	98 00		
" " Arts and Manufactures	203 50		
	1583 50		
Unpaid	26 00		
		1557 50	
" Prizes of previous year		9 00	
" Legislative Grant to Township Societies		412 50	
" Preparing Show Grounds		362 37	
" Markham Society		159 05	
" Musical Band		50 00	
" Working Expenses		240 50	
			2790 92
Balance in hand			179 54

REPORT.

* * * * *

In February, your Directors united with the Directors of the Markham Agricultural Society for and during the year, in adopting this system the Directors feel well satisfied with the results.

The Societies united on the following terms and conditions, viz :—

Each Society to appropriate and pay its entire funds raised or received during the year to said United Board to defray the expenses of the united Societies, and any losses sustained or profits received to be borne equally or divided by each Society.

The Directors of each Society to have an equal voice and vote on all matters pertaining to said United Board.

The United Board held a Spring Fair for the exhibition of stallions and bulls which was a great success, especially heavy draft horses which were very superior animals, and a greater number exhibited than in any former year.

In October, the United Fall Fair was held as usual on the Societies' grounds, Markham Village, and was very successful, all classes being well represented, the show of wheat and grain generally being far ahead of former years.

* * * * *

Markham.

Dr.	$ cts.	$ cts.
To Balance in hand	396 13	
" 200 Members' Subscriptions	200 00	
" Legislative Grant	165 00	
" Profits of Spring and Fall Shows	159 05	
		920 18
Cr.		
By J. Robinson on account of Union Show	365 00	
" Paid on account of preparing Grounds, as per Resolution	250 00	
" Working Expenses	13 00	
		628 00
Balance in hand		292 18

Note—This Society united with the Electoral Division Society for a Fall Show, which was eminently successful.

Scarborough.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		39 19	
" 169 Members' Subscriptions		191 00	
" Admission to Show		89 70	
" Legislative Grant		140 00	
" Municipal Grant		25 00	
			475 89
Cr.			
By Prizes for Live Stock	194 50		
" " Field Products	41 50		
" " Dairy "	13 50		
" " Horticultural Products	21 00		
" " Agricultural Implements	11 00		
" " Arts and Manufactures	50 00		
		331 50	
" Preparing Show Grounds		26 16	
" Working Expenses		64 55	
			422 21
Balance in hand			53 68

YORK, WEST.

Dr.	$ cts.	$ cts.
To Balance in hand	112 05	
" Members' Subscriptions	37 00	
" Legislative Grant	700 00	
" Municipal Grant	125 00	
" Balance on Union account	71 09	
		1045 14
Cr.		
" Legislative Grant to Township Societies	550 00	
" Municipal Grant to do	62 50	

Cr.	$ cts.	$ cts.
By Premiums at Spring Show	118 00	
" Do. at Union Fall Show	370 00	
" Seal	10 00	
" Working Expenses	27 14	
		937 64
Balance in hand		107 50

Note.—The details of the prizes at the Fall Exhibition will be found in the Report of the Vaughan Society.

REPORT.

* * * * *

The result of the exhibitions of the past year has been satisfactory. There seems to be a constantly increasing demand among agriculturists for thorough bred stock of all descriptions, and therefore the show of such animals continues to be an improving one. In regard to horses the heavy draught seems to be the description most in favour, from the great demand for this class of stock among our neighbours in the United States. Other classes, however, such as bloods and roadsters, command a great deal of attention. In the cattle department the Durhams continue to maintain the lead. In sheep Cotswolds are the favourites, Down sheep also being looked upon very favourably. Berkshires and Suffolks are most in request in the swine department. Various descriptions of poultry are being imported and bred to a much greater extent than formerly, and this production of the farm is well worthy of more attention than is commonly given to it.

The crops, as a rule, have turned out favourably, though from the extreme drought which lasted so long during summer and autumn, root crops and others late sown were inferior.

In the implement department we see from year to year great improvement in the means for taking off our crops, for cultivating the soil, and particularly for improved systems of drainage, and too much encouragement cannot be given to this branch of our industrial pursuits.

* * * * *

Etobicoke.

Dr.	$ cts.	$ cts.
To Balance in hand	73 77	
" Members' Subscriptions	161 79	
" Admissions to Show	30 10	
" Legislative Grant	165 00	
" Municipal Grant	60 00	
		490 66
Cr.		
By Prizes at Fall Show	285 00	
" Preparing Show Grounds	27 00	
" Working Expenses	100 39	
		412 39
Balance in hand		78 27

Vaughan.

Dr.	$ cts.	$ cts.
To Balance in hand	139 80	
" Members' Subscriptions	193 40	
" Admissions to Show	413 40	
" Legislative Grant	140 00	
" Municipal Grants	75 00	
" Cash from W. Riding Society	381 00	
		1342 60

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	488 50		
" " Field Products	86 00		
" " Dairy "	23 00		
" " Horticultural Products	18 50		
" " Agricultural Implements	52 00		
" " Arts and Manufactures	84 00		
" " Bands	30 00		
	782 00		
Unpaid	173 58		
		608 42	
" Preparing Show Grounds		153 25	
" Agricultural Publications		18 75	
" Working Expenses		156 16	
			936 58
Balance in hand			406 02

Note.—This Society united with the West York Electoral Division Society in a fall exhibition, which was numerously attended, and considering the dryness of the season, the show in most departments, was very satisfactory.

York.

Dr.	$ cts.	$ cts.	$ cts.
To Balance in hand		324 00	
" Members' Subscriptions		176 00	
" Legislative Grant		165 00	
" Special Prizes		24 00	
			689 00

Cr.	$ cts.	$ cts.	$ cts.
By Prizes for Live Stock	103 00		
" " Field Products	55 00		
" " Dairy "	18 00		
" " Horticultural Products	188 00		
" " Arts and Manufactures	76 00		
	440 00		
Unpaid	151 00		
		289 00	
" Working Expenses		107 99	
			396 99
Balance in hand			292 01

REPORT.

The Fall Exhibition was held in the Village of Yorkville, on the 11th and 12th of October, 1871. The successful competitors, to whom prizes were awarded, can be ascertained by reference to the prize list.

The Exhibition, upon the whole, notwithstanding the long drought during the spring and summer, was a success.

The show of horses was very fair, and would compare favourably with other years. The Society did not offer prizes for cattle, sheep, pigs or poultry.

Grain, seeds and roots were well represented.

The show of garden vegetables was extensive, and of exceeding good quality, as was also

the show of fruits, which, with the garden vegetables, would compare favourably with the display usually seen at the Provincial Exhibition.

The show of dairy produce was well sustained, and of excellent quality.

The show of domestic manufacture was not large but was of very good quality.

The ladies' department was extremely good, and of a varied assortment in all branches.

The fine Arts were largely represented and excelled any other exhibition of the Society in former years.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (B).

REPORT OF THE COUNCIL OF THE AGRICULTURAL AND ARTS' ASSOCIATION OF ONTARIO, FOR 1871.

OFFICE OF THE AGRICULTURAL AND ARTS' ASSOCIATION OF ONTARIO,
TORONTO, April 1, 1872.

To Hon. A. McKELLAR,
Commissioner of Agriculture, &c.,
Ontario.

SIR,—I have the honour, on behalf of the Council of the Agricultural and Arts' Association of Ontario, to present the following summary Report of the proceedings of the Association during the past year.

The Council for the past year consisted of the following members, viz.:—

Elected Members.—Messrs. George McDonell, Cornwall; Hon. J. Skead, Ottawa; Andrew Wilson, Maitland; Jas. J. Farley, Cannifton; Nathan Choate, Port Hope; George Graham, Brampton; George Murton, Guelph; J. C. Rykert, M. P. P., St. Catharines; Hon. David Christie, Paris; Robert Gibbons, M. P. P., Goderich; Lionel E. Shipley, Falkirk; Stephen White, Charing Cross.

Ex-Officio Members.—Hon. John Carling, Commissioner of Agriculture, &c.; James Young, M.P., President of the Mechanics' Institute Association of Ontario; Rev. R. Burnett, President of the Fruit Growers' Association; George Buckland, Professor of Agriculture in the University of Toronto; Rev. Dr. Ryerson, Chief Superintendent of Education; Rev. C. J. S. Bethune, President of the Ontario Entomological Society.

The first meeting of the Council took place at Toronto, on the 28th February, when the Hon. Mr. Skead was chosen President; Mr. White, Vice-President; and Mr. Graham, Treasurer. At this meeting the attention of the Council was directed to the disadvantageous position in which Canadian breeders were placed by the U. S. Tariff, in providing that animals specially imported for breeding purposes, *from beyond the seas only*, shall be admitted duty free, and a resolution was passed to be forwarded to the Hon. Sir John A. Macdonald, then at Washington, to bring the matter under the notice of the U. S. authorities, with a view to a change in the regulations. Congress subsequently took action in the matter, in consequence of a motion of Mr. Conger, of Michigan, and the desired change was obtained in favour of Canadian breeders.

Mr. Graham submitted his accounts for the year 1870, as passed by the Auditors, showing a balance of $6,254·04 to the credit of the Association. The Executive Committee for

the ensuing year was appointed. A resolution was passed, authorizing the addition of $3,000·00 to the amount offered in the Prize List of the Provincial Exhibition. The Treasurer reported that the suit in Chancery against Mr. Denison, the late Treasurer, had been decided in favour of the Council, and that the amount found to be due was $14,897·61. Tenders for printing the transactions of the Association were submitted, and the contract was awarded. The Secretary was also instructed to advertize for tenders for the ordinary printing of the Association for the ensuing year. Mr. Cooley, the late efficient General Superintendent of the Association, tendered his resignation, and Mr. Thos. Keyes, of St. Catharines, was appointed in his place. A number of regulations were made with reference to the proceedings of the Association, and the management of the Exhibition, during the ensuing year.

The Council met again at Toronto on May 3rd. The Prize List for the Provincial Exhibition was revised and ordered to be printed, the amounts of the prizes, in nearly all the classes, being considerably increased, and new special prizes offered in some of the most important classes. It was also thought desirable that a thorough Field Trial of Agricultural Implements should take place under the auspices of the Association during the ensuing summer. The sum of $800 was appropriated to this object, and a committee was appointed to make the necessary arrangements. A committee was appointed to confer with the authorities at Kingston, in reference to the preparation of the buildings and grounds for the forthcoming Exhibition. The tenders for the ordinary printing of the Association for the ensuing year were submitted, and the contract awarded. A number of accounts were submitted and passed. A committee was appointed to effect a settlement with the University authorities in regard to the Experimental Farm matter, and other business of a routine character was transacted.

The next meeting of the Council took place at Toronto, on June 21st. Arrangements were made for holding the Implement Trial at Paris, in July. A report was submitted by the Special Committee appointed to confer with the Kingston authorities in reference to the Exhibition buildings. The Treasurer submitted a report of the special committee appointed to confer with the University authorities, showing that the University was prepared to pay the sum of two thousand dollars in full for the Experimental Farm premises, and a resolution was passed by the Council, agreeing to accept that sum. The tenders for printing the second volume of the Canadian Short Horn Herd Book were submitted, and the contract awarded (as well as the previous printing contracts) to the Globe Printing Company of Toronto. The Judges for the approaching Exhibition at Kingston were nominated. The Special Committee was authorized to give out contracts for the internal fittings of the Exhibition Buildings.

The Council met again at Kingston on September 25th, on the opening of the Exhibition, and continued to meet during the week, to transact the details of business connected with the Exhibition and the annual meeting of the Association. His Excellency the Governor General, the Lieut.-Governor of Ontario, and the Lieut.-Governor of New Brunswick, honoured the Exhibition with their presence, and were severally received and presented with appropriate addresses by the Council of the Association upon the grounds.

The annual meeting of the Directors of the Association, took place at Kingston, on Thursday evening, September 28th, at which meeting it was resolved, that the Provincial Exhibition for 1872 should be held at the City of Hamilton.

The last meeting of the Council during 1871, took place at Toronto, on December 6th. A claim of Mr. Fysh and others, of London, for compensation, for expenses incurred in entertaining the guests from the Maritime Provinces in 1865, came again before the Board, and it was ordered that the balance of $300, which had remained in the hands of the late treasurer from the fund granted by Government, for the entertainment of the said guests, should be paid with interest in liquidation of this claim. The receipt of $2,000 from the University authorities in settlement of the Experimental Farm Arbitration matter was reported. A committee was appointed to confer with Messrs. Fleming and Co., in reference to a renewal of the lease of the portion of the Agricultural Hall occupied by them. It was resolved that the Exhibition of 1872 should be held during the week commencing September 23rd. Accounts were submitted and passed, and other matters relating to the business of the year, were disposed of.

The Exhibition of 1871.

The Exhibition took place at Kingston on September 25th to 29th. A report of the display in the various classes, as compared with previous Exhibitions, has already, in accord-

ance with the requirements of the Agricultural and Arts' Act, been forwarded to the late Hon. Commissioner of Agriculture, and to that report the Council beg leave to refer. In addition, the Council submit the subjoined statement, similar to the one submitted last year, showing the distribution of the prizes in the various classes throughout the different counties, and also showing the total number and amount of prizes awarded in each county, in 1870 and 1871 respectively. An examination of these tables will exhibit distinctly the manner in which the distribution of the prizes is affected by the locality in which the Exhibition is held. It will be seen that while those counties, contiguous to the seat of the Exhibition, receive their fair share of prizes, and that due amount of encouragement in those classes in which they are competent to compete on equal terms, to which they are justly entitled by the fact of the Exhibition being held in their district, that yet those particular counties which have obtained a distinguished character in certain departments of Agricultural enterprize, still maintain their lead in those departments, and thus place the opportunity for improvement within the reach of such counties as are not yet so far advanced in those branches. For instance, the great improved Stock breeding Counties of Durham, Halton, Ontario, Peel, Wellington and York, and the great Fruit-producing County of Lincoln, still maintain their supremacy in those classes at Kingston, as well as at Toronto, notwithstanding any disadvantage at which they may be placed by distance of carriage; while in the general products of the farm, the garden and the work-shop, the Counties of Frontenac, Lennox and Addington, and others contiguous to the seat of the Exhibition, receive that fair share of reward to which they are entitled by the number or quality of their respective contributions. These facts establish, in the opinion of this Council, the wisdom of maintaining the Provincial system of holding the Annual Exhibitions alternatively in different localities, for the advantage and improvement of the whole Province, in preference to a permanently centralized, or sectional system, as has been sometimes advocated.

STATEMENT of the Number and Amount of Prizes awarded, in each General Class, to each County in Ontario, at the Provincial Exhibition, Kingston, 1871.

COUNTIES.	HORSES.		CATTLE.		SHEEP.		SWINE.		POULTRY.		IMPLEMENTS.		GRAINS & SEEDS.		FIELD ROOTS.		FRUIT & WINE.		Gard'n Veg't's Pl'ts & Flow'rs	
	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount
		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
Addington	5	55 00	6	88 00							3	8 00	3	10 00	2	4 00			1	1 50
Brant	1	15 00			7	58 00			3	6 00	12	71 00	4	20 00			2	3 00		
Bruce											1	10 00								
Carleton	2	70 00	1	20 00																
Dundas			6	135 00																
Durham	13	284 00	26	444 00	9	92 00	3	34 00			5	39 00	8	32 00	1	2 00	1	1 00		
Elgin											3	15 00								
Essex																				
Frontenac	11	137 00	11	159 00	4	32 00	10	110 00	22	50 00	21	114 00	19	68 00	38	68 00	35	67 00	101	203 50
Glengarry	1	36 00									1	8 00	2	18 00						
Grenville											2	12 00								
Grey	1	18 00					1	7 00												
Haldimand											2	34 00								
Halton	1	26 00					10	242 00	2	6 00	1	2 00								
Hastings	4	65 00	1	15 00	7	113 00	1	17 00	1	4 00	4	34 00	3	10 00						
Huron											1	6 00								
Kent																				
Lambton																				
Lanark	1	8 00	1	25 00							1	1 00					1	1 00		
Leeds	1	15 00									5	22 00								
Lennox	11	161 00	2	17 00	5	40 00					2	10 00	3	10 00			2	4 00	1	1 00
Lincoln									31	92 00	2	24 00	9	43 00	1	6 00	123	371 50	7	11 00
Middlesex					3	37 00					1	15 00	2	35 00						
Norfolk																				
Northumberland					4	33 00			6	18 00	3	8 00	16	88 00	15	43 00	1	2 00	1	1 00
Ontario	10	249 00	24	510 00	17	232 00	2	49 00	22	59 00	9	60 00	5	22 00						
Oxford																				
Peel			9	250 00	13	413 00	19	322 00	1	4 00	1	8 00								
Perth					2	28 00					5	36 00								
Peterboro'											1	2 00								
Prescott			1	35 00							2	27 00								
Prince Edward	4	62 00	2	20 00			5	63 00	2	3 00	9	44 00	2	16 00			6	32 00	5	13 00
Renfrew			1	20 00																
Russell																				
Simcoe	2	34 00									1	2 00								
Stormont																				
Victoria											1	2 00								
Waterloo					1	8 00					7	59 00								

STATEMENT of the Number and Amount of Prizes awarded, in each General Class, to each County in Ontario, at the Provincial Exhibition, Kingston, 1871.—*Continued.*

COUNTIES.	HORSES.		CATTLE.		SHEEP.		SWINE.		POULTRY.		IMPLEMENTS.		GRAINS & SEEDS.		FIELD ROOTS.		FRUIT & WINE.		Gard'n Veg't's Pl'ts & Flow'rs	
	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount
		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
Welland					5	42 00			3	8 00	5	51 00								
Wellington	1	40 00	48	864 00	14	197 00	3	32 00			6	39 00	2	7 00	10	21 00	3	7 00	8	14 00
Wentworth					2	16 00					5	76 00	3	14 00	5	10 00	6	13 00	12	17 00
York	18	337 00	10	194 00	9	102 00	4	48 00	9	25 00	15	181 00	12	244 00			39	150 00	1	5 00
Other Localities	5	63 00	10	205 00			1	17 00			2	33 00			6	11 00				
	92	1675 00	159	3001 00	102	1443 00	59	941 00	102	275 00	139	1053 00	93	637 00	78	165 00	219	651 50	137	267 00

STATEMENT.—*Continued.*

COUNTIES.	Dairy Products. Provisions, &c.		Cabinet Ware. Carriages, &c.		Drawings. Fine Arts, &c.		Ladies' Work.		Machinery Work in Metals, &c.		Musical Instruments—Natural History—Paper, Printing, &c.		Leather Manufactures—Saddlery—Shoemakers' Work. &c.		Woollen, Flax, & Cotton Goods—Furs, &c.		Total Number of Prizes — Per Counties — Kingston, 1871		Total Number of Prizes — Per Counties — Toronto, 1870.	
	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount	No. of Prizes	Amount
		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
Addington	7	21 00	1	10 00			17	40 00							6	20 00	51	257 50	2	6 00
Brant	3	10 00							1	10 00							33	193 00	45	299 00
Bruce																	1	10 00		
Carleton					2	6 00	1	1 00							2	9 00	8	106 00	2	32 00
Dundas					1	1 00											7	136 00	8	249 00
Durham							2	4 00			2	8 00			1	3 00	71	943 00	89	799 50
Elgin																	3	15 00	3	28 00
Essex			1	2 00													1	2 00	3	32 00
Frontenac	30	173 00	21	88 00	37	206 00	55	107 00	17	96 00	15	133 00	36	134 00	29	126 00	512	2071 50	9	39 50
Glengarry	4	12 50													14	59 00	22	133 50		

Grenville	2	4 00	....	....	....	....	5	10 00	1	4 00	....	....	....	....	....	....	10	30 00	4	8 00
Grey	....	....	....	....	....	....	....	....	2	13 00	....	....	....	....	....	....	4	38 00	5	38 00
Haldimand	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	34 00	5	85 00
Halton	....	....	2	6 00	....	....	....	....	....	....	....	....	....	....	....	....	16	284 00	38	224 00
Hastings	2	45 00	6	53 00	....	....	....	....	2	11 00	....	....	....	....	....	....	31	367 00	16	167 00
Huron	1	3 00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	9 00	22	133 50
Kent	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	4 00
Lambton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	13 00
Lanark	4	52 00	....	....	....	....	....	....	....	....	....	....	....	....	2	9 00	10	95 00	1	15 00
Leeds	....	....	2	9 00	....	....	....	....	7	26 00	....	....	2	10 00	....	....	17	82 00	3	11 00
Lennox	4	16 00	5	53 00	9	62 00	2	5 00	....	....	....	....	2	4 00	2	12 00	50	395 00	11	72 00
Lincoln	2	10 00	1	5 00	....	....	....	....	2	8 00	....	....	....	....	9	29 00	188	599 50	119	442 00
Middlesex	....	....	....	....	5	37 00	....	....	....	....	....	....	....	....	....	....	11	124 00	62	326 00
Norfolk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Northumberland	....	....	1	1 00	3	14 00	19	44 00	1	3 00	....	....	....	....	2	5 00	72	260 00	57	242 50
Ontario	....	....	....	....	5	18 00	8	12 00	2	8 00	....	....	....	....	....	....	104	1219 00	107	1118 50
Oxford	....	....	1	2 00	....	....	....	....	....	....	1	10 00	....	....	....	....	2	12 00	33	118 50
Peel	....	....	....	....	....	....	....	....	....	....	....	....	1	4 00	....	....	44	1001 00	65	725 50
Perth	....	....	....	....	....	....	....	....	2	21 00	....	....	....	....	....	....	9	85 00	23	126 00
Peterboro'	....	....	....	....	....	....	....	....	1	3 00	1	6 00	....	....	....	....	3	11 00	8	39 50
Prescott	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	62 00	....	....
Prince Edward	....	....	12	84 00	2	16 00	....	....	2	6 00	....	....	1	7 00	....	....	52	366 00	8	93 00
Renfrew	....	....	3	16 00	....	....	....	....	....	....	....	....	....	....	....	....	4	36 00	....	....
Russell	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Simcoe	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	36 00	21	253 00
Stormont	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	16 00
Victoria	....	....	1	4 00	....	....	....	....	....	....	....	....	....	....	....	....	2	6 00	2	3 00
Waterloo	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8	67 00	52	367 00
Welland	1	6 00	....	....	....	....	1	2 00	1	4 00	....	....	....	....	1	5 00	17	118 00	19	108 50
Wellington	....	....	....	....	3	15 00	....	....	4	24 00	7	74 00	....	....	7	33 00	116	1371 00	173	1471 00
Wentworth	....	....	....	....	....	....	1	3 00	6	18 00	....	....	....	....	1	5 00	41	172 00	174	744 50
York	10	22 00	3	18 00	47	342 00	3	4 50	13	89 00	8	56 00	1	4 00	....	....	202	1821 50	665	3434 50
Other Localities	1	2 00	2	6 00	6	18 00	4	8 00	3	17 00	....	....	....	....	2	10 00	42	390 00	65	359 00
	71	376 50	62	357 00	120	735 00	118	240 50	67	361 00	34	287 00	43	163 00	78	325 00	1774	12957 50	1926	12243 50

THE VETERINARY COLLEGE.

It is satisfactory to know that not only the number of pupils attending the Veterinary School continues progressively to increase, but that the curriculum of study embraces a wider range, and the standard of examination is of a higher character than formerly. The students have now every facility for making themselves thoroughly acquainted with Practical Anatomy, as the dissecting room is large and convenient, and the temperature and ventilation easily regulated. The Infirmary, on the same premises, affords them every opportunity for gaining information as to the cause and treatment of disease, and the manipulations requisite in case of accidents. Chemistry, Materia-Medica, and Physiology, are thoroughly taught by Professors of repute in their several departments; and a course, theoretical and practical, is given on the breeding and management of the domesticated animals. There is a large amount of work done for the small amount of pecuniary aid given by the Association. It will probably be found necessary as the School increases, to increase the present grant, (about $550), in order to meet effectually the constantly expanding scope of the institution.

It is also gratifying to be assured that the students who have graduated in this School have, as a rule, been successful in establishing themselves as veterinary practitioners in different parts of the Province. The constant increase of Live Stock, both in amount and quality, naturally requires a higher qualification of those who undertake the onerous duty of treating disease, and there can be no doubt that, from the importance and exigencies of the case, well qualified veterinary surgeons will ere long be fully and generally appreciated.

During the last Session of the Parliament of Ontario, the Agricultural and Arts' Act 31 Vic., Cap. 29, Sect. 19, Sub. Sect. 6 was so amended that veterinary practitioners holding diplomas, "shall be entitled to professional fees, in attending any Court of law as witnesses in such cases as relate to the profession; and no person who does not possess a diploma or proper certificate from some duly authorised Veterinary College, within or without this Province, shall append to his name the term Veterinary-Surgeon, nor any abbreviation thereof." —The object of this salutary restriction is not to prevent persons, not duly educated for the profession, from practising it, but to endable the public to distinguish generally between mere empiricism and professional skill and ability; and it is earnestly to be hoped that the public will lend its aid in the due enforcement of the law.

The Session of 1870–71 closed the first of April, and the annual examinations took place on the 14th of the same month. The following gentlemen were granted the diploma of the Board, viz.:—

Mr. J. Ceaser, Port Hope; Mr. T. Churchill, Seaforth; Mr. Wm. Churchill, Goderich; Mr. A. Thompson, Hamilton; Mr. R. Evans, Tullamore; Mr. J. Bentley, King.

The Board of Examiners consisted of Mr. Hagyard, V. S., Brampton; Mr. Coleman, V. S., Ottawa; Mr. Wilson, V. S., London; Mr. Cowan, V. S., Galt; Mr. Thomas, V. S., Guelph; Mr. Davidson, V. S., Whitby; Dr. Thorburn, Toronto; Dr. Rowell, Toronto.

The examiners were well satisfied with the standard of the examinations, and complimented the candidates on their general proficiency.

The Session of 1871–72 commenced on the 25th of October and the attendance is again on the increase, On the 21st of December the following named students passed a final examination, (having passed a primary examination in Anatomy in April last), and received the diploma of the Board, viz.:—

Robert Charles Hutchings, Ottawa; William Colcleugh, Mount Forest; Joseph Hawkins, Tilsonburgh; William Cooper Fair, Chatham; William Charles Kidd, Listowell; James Gibson, Walkerton; John Speirs, Guelph; Robert Young, Bowmanville; John James Richardson, Meaford.

The gentlemen who acted as examiners were Messrs. Hagyard, Wilson, Cowan and Sweetapple, Veterinary Surgeons; and Drs. Barret, Thorburn, and Temple.

FINANCES.

The Report of the Auditors' and the Treasurer's statement, showing the details of the receipts and disbursements during the past year, and the balance remaining at the credit of the Association at the close of the year, are herewith subjoined.

By this statement it appears that, including the balance of $6,254. 04 from the previous

year, the sum of $27,857.80 was received; and that the sum of $25,570.02 was expended, leaving a balance in the Bank on the 31st December, 1871, of $2,287.78 at the credit of the Association.

I have the honour to be, Sir,
Your most obedient servant,

HUGH C. THOMSON,
Secy.

AUDITORS' REPORT.

We certify that we have compared each item of the following account with the vouchers, and where the cheques were yet outstanding have compared the items with the bank-book, and find every item to be correct, and that the balance that was in the Treasurer's hands on the 21st December, 1871, was two thousand two hundred and eighty-seven dollars and seventy-eight cents, ($2,287.78), and that the bank-book shows the above balance to have been in the bank, at that date, exclusive of interest account.

January 4th, 1872.

D. W. BEADLE,
FREDERICK WM. STONE, } *Auditors.*

ABSTRACT

Of detailed statement of the Treasurer of the Agricultural and Arts' Association of Ontario, for the 31st December, 1871.

DR.	$ c.	$ c.
To Balance on hand 1st July, 1871		6254 04
" Receipts:		
For Miscellaneous Account	2174 00	
" Prize Account	153 00	
" Rent Receipts	1000 00	
" Exhibition Receipts	7592 76	
" Legislative Grant	10000 00	
" Re Denison	680 00	
		21599 76
		$27853 80
To Error in Judges' Account, folio 196, voucher 581		4 00
		$27857 80
CR.		
Payments:		
For Prizes	13008 00	
Salaries Account	1879 96	
Miscellaneous Account	1217 43	
Exhibition Expenses	5363 87	
Printing and Stationery	1450 76	
Board Expenses	975 00	
Trial of Implements	769 00	
Veterinary School	555 00	
Legal Expenses (Denison's costs)	350 00	
Carry forward,		$25569 02

Brought forward,.....	$25569 02
By error in Robert Shearer's prize, folio 190, voucher 471	1 00
	$25570 02
Balance.....	2287 78
	$27857 80

1872.
Jany. 1.—To Balance.....$2287 78

We certify the above balance to be correct,

D. W. BEADLE,
FREDERICK WM. STONE, } *Auditors.*

January 4th, 1872.

PRESIDENT'S ADDRESS.

(HONORABLE JAMES SKEAD.)

Gentlemen, Officers and Members of the Agricultural and Arts Association of Ontario,—

A short twelvemonths has brought us from Toronto to Kingston, and from the able and exhaustive address of my predecessor in office to my own, which, in accordance with time-honoured custom, I submit to you this evening. Without apologizing for the treatment, I may say that the theme is deserving of the ablest effort. We are met together at this City of Kingston to exhibit to all who may favour us with their presence what the farmers and the mechanics of the Province of Ontario have lent their time, talents and abilities to achieve during the past twelvemonths. The results of their labours in their respective departments have been openly exposed to view, and it is for those who have seen to decide if in this northern clime of ours, if in this land for a short space matted in its snowy drapery, old mother earth does not throw out from her ample bosom as fair and sightly products as flourish and thrive in more southern latitudes. Here it is the hand of man which wrests from nature what she gives elsewhere more ungrudgingly; but in a contest men learn to fight more bravely and succeed more brilliantly, and Nature to yield more gracefully and abundantly. The very obstacles in our way stimulate our energies and crown our hopes. Thanks to the Giver of all good, the harvest of this season has been a fruitful one. Amidst profound peace the husbandman has gathered his grain into the garner. Whilst in other parts the hand of man has been raised against his fellow-man, to slay and destroy, we have escaped the clash of arms, our only strife being one of friendly rivalry to show how how far Canada could contribute her quota towards advancing the peace, prosperity and well being of all mankind. Fortunately in the deliberations of those who control our public affairs, moderate councils have prevailed, and the small black cloud in the distance which at one time seemed to overshadow us, is rapidly passing away, and there is drawing upon us the prospect of a more perfect understanding between two neighbouring peoples who, possessed of the same language, literature and ideas, should only rival one another in peaceful arts, and strive to excel in excellence.

The maxim of the British Empire is peace, and we, of all her Colonies, are deeply interested in construing that word literally. Our motto is defence, not defiance; and although on any and every occasion ready to resist oppression, we do not desire nor could we gain anything from an aggressive policy. Already the simple and primitive argument of mutual interest is extending our possessions, until we have stretched in one Anglo-Saxon belt from the Atlantic to the Pacific—an infant Hercules, immature as yet, but giving evidence of inherent strength and qualities which, when properly formed and directed, may be powerful enough to sway the destinies of a universe. Thrown together in this new and northern world, representatives of many distinct families and nations, our special care should be union and amalgamation among ourselves, and a constant and easily attainable object to give to the country of our adoption a standing and a position among the nations of the earth. A kind and beneficent Providence has smiled upon the labours of the husbandman during the past season, and I have to congratulate you, gentlemen, upon the result of this year's harvest. Except perhaps in a single staple, hay, the crops have been above the usual average; timely showers throughout the season have filled our barns, and in some cases over-filled them. It would be of immense

advantage could a proper and more efficient system of drying grain by artificial means be adopted, and the great cost of the storage in bulk of grain and straw be in some measure lessened. As farming, like other business pursuits, comes to be more systematized, and a fair proportion between the number of acres cultivated and the capital employed is better understood, improvements and amelioration would naturally follow, until the whole is reduced to the position as a scientific pursuit, to which its great importance to the community entitles it.

The scarcity and high price of labour naturally lead to the introduction of machinery to supplement manual labour. The mower and reaper have supplemented the scythe, reaping-hook and cradle used not many years ago; and as we progress, a more perfect understanding of other mechanical contrivances will replace our present crude implements.

Progress should be the farmer's aim. He should study how to obtain the greatest possible yield from the least quantity of land with the least possible expense; he should educate himself to that intent, and not alone himself, but those who may come after him in the same occupation. The son should be taught that the occupation of the father is not the mean ignoble one it is the somewhat common error to suppose it to be; he should be shown that properly to till the soil requires all the intellectual faculties men are commonly endowed with; that it is not merely a question of brute force and ignorance, but requires also head and intelligent effort. The true farmer is a member of one of the noblest professions; he is a chemist, a mechanic, an astronomer, a botanist, and in fine, an intelligent observer of God's works in nature; a man of intellect as well as of action. It is the great mistake of the day to imagine that the farmer's son who gives the smallest possible evidence of brains is altogether a too superior being to tread in the footsteps of his father, but must perforce be thrust into some one or other of the so-called learned professions; whereas, in reality, he forsakes the avocation he was most suited for by nature. Thews and sinews are no disgrace to any man, and it were well that the present generation should pay more attention to the manners and customs of their forefathers, who reduced the primeval forests into cultivated fields.

The farmer should endeavour to make his calling attractive to his children; he should introduce a little taste into his surroundings; it is not enough to own a house merely, but something should be done to make that house pretty, pleasing and attractive—a nucleus around which would gather the affections and sympathies of the entire family. The old homestead should be a thing of beauty as well as use; shady trees should overtop its rafters; bright flowers and fruit should find their place in the indispensable garden plot: in short, the whole should point it out as the well-loved home of a rational civilized Christian man, and not the abode of a mere animal. The children playing around the door-step form their impression from their surroundings. The bleak and barren birth-place can produce no feeling of love, no wish to live the homely life of the farmer, but rather drives them from it and throws them into other pursuits.

Here in Canada, the care of stock in the winter months is a very important feature. Thus, housing and economical feeding deserve the farmer's strictest attention. Every animal owned requires shelter, and farm buildings should be arranged to give the greatest amount of shelter with the least expense.

Farm architecture is well deserving of greater attention than it receives in this country. In England, where properly constructed buildings are not absolutely indispensable, as they are here, it has almost assumed the proportion of a separate branch of the profession. It may now safely be said that Canada and her agricultural interests have reached that point when the farmer should abandon the hap-hazard measure of construction which places his buildings as fancy or the convenience of the moment dictate, the inevitable result being a confused and irregular mess, unsightly to the eye and but ill adapted to the purposes for which they were originally intended; a constant source of annoyance, causing more trouble and expense to the owner in the care of his stock and the supervision of his farm duties than would have sufficed twice over to have reduced the whole, in the first instance, to a well-digested and organized plan pervading every department, lightening his labours, and gladdening both heart and eye—a source of profit as well as pride.

There is no good reason why the buildings on a farm should not be arranged for the introduction of machinery on a greater or lesser scale, according to the extent of business done. A few feet of shafting in each farm, with either steam or horse power as the motive agent, could not fail in a short time to repay to the full the first cost.

In the management of the buildings the root cellar should be carefully looked after, as

the storage place of one of our most important crops, it should for convenience of feeding be easily accessible in all weathers—in fact serve as a point around which should cluster the other buildings. I have no doubt that feeding of cattle would be much more profitable than it now is were the steaming or fermentation and cutting of their food more systematically attended to. Without plentiful manuring no successful result can be expected from the farm, and the best manufactory for that manure, and where it can be most readily and profitably procured, is from the cattle fed at home, whether they be in the form of beef for the market or in the still more desirable form of dairy cattle. In connection with this last subject I am pleased to see that throughout the country generally, farmers are paying increased attention to the products of the dairy. The trade in butter and cheese is already an important one, but is still susceptible of great enlargement. Cheese factories have become an institution amongst us, and their good effects are most sensibly felt in the districts in which they are located. I hope that in a short time no section of the country will be without its factory, and that our exports of these two articles will be greatly augmented. Cattle fed at home consume for the most part those products of the farm which should not, unless under peculiar circumstances, ever be sold off it. In return for what they eat they give you meat and many things beside, as well as the material for enriching your soil. The man who understands his business will always have his proportionate acreage of roots; and I expect to see, year by year, that proportion extended, as it is undoubtedly the foundation stone of all good farming, and its thorough cultivation forms a school of agriculture in which to educate our young men. Our staple roots, such as turnips, carrots, mangolds, and the rest, require but little notice at my hands. Their importance is already recognized and appreciated; but there is one branch of agricultural industry to which I wish to direct your most particular attention as being most important to the country at large. I refer to the cultivation of the sugar beet, an industry which is not at present to any great extent located among us, but which in France, Belgium and Germany forms their leading crops, and has become a source of wealth to those nations. Latterly the English farmers, ever alive to improvement and profit, have taken it up, and there is now forming in England a company for the cultivation of the beet-root, and manufacture of sugar therefrom, with a capital of two hundred thousand pounds sterling. Of such moment is the question of its introduction into England considered, that the Hon. Robert Lowe, Chancellor of the Exchequer, in introducing into Parliament a Bill for the remission of sugar duties, spoke as follows:—"We know that the beet-root industry of the Continent is spreading very widely. There is the prospect to grow it with the same effect in this country; and could we hope for anything so good as that it could be introduced with success, it would be one of the greatest blessings that could befall the country."

And, again, Professor Voelcker, perhaps the highest scientific authority on agricultural matters in England, writes to the journal of the Royal Society that the growth of beet-root for the manufacture of sugar in the north of Germany has tended, more than anything else, to raise the general standard of agriculture in the larger districts in that country; and he believes it would have the same effect in England. It is asserted also, on reliable authority, that the spent beet-root pulp which is the residue left after the saccharine juices are extracted, is better food for cattle, and has more milk-giving properties than even the root-crop, and that its culture as a rotation crop—(a consideration which should ever be present in the farmer's mind)—prepares the soil for a heavy and superior crop of wheat. I am indebted to my friend, Mr. S. G. Harvey, for many valuable suggestions on this subject. He informs me that when in the year 1853, the late Emperor of the French visited Valenciennes, he passed under an arch upon which was inscribed the great extent of land under cultivation with wheat in this district, and the largely increased production of the soil since beet root had become an article of extended growth.

1st. The hectares of wheat (2½ statute acres) which formerly yielded only 19 hectolitres per acre, now (1853) produced 27 hectolitres.

2nd. Where formerly there were only 4,202 hectares under wheat, there are now (1853) 9,240 hectares sown.

3rd. The number of cattle in the District increased from 6,995 formerly, to 40,656 in 1853.

The *Pall Mall Gazette* of the 25th of March last says:—"In many parts of the continent beet sugar has nearly, if not quite driven cane sugar out of the market, and the percentage of it taken by us is gradually becoming far higher than the percentage representing the gene-

ral augmentation of our sugar supplies." The total production of beet root sugar for the past three years was in 1868, 650,000 tons; in 1869, 841,000 tons; in 1870, 925,000 tons. At a meeting of the English Society of Arts, held on the 8th July last, James Caird, Esq., C.B., the Chairman, stated that the "quantity of sugar imported was equal to one-eighth of the entire consumption of wheat, both foreign and native grown, while the foreign sugar imported was equal to one-fourth of the import of foreign wheat." If such be the results in other countries, why should not so important a branch of industry be tried here. There is surely nothing in the soil or climate of Canada which would forbid its growth; on the contrary, if properly tried, I am convinced it would prove eminently successful, and add another to the best of our national products. I would earnestly recommend action in the matter, and would suggest the subject for the consideration of this Board, and of the Government of the country.

Another important feature in the agricultural industry of this Province is the cultivation of flax, which even this year, although not grown to the extent its merits entitle it, is entirely satisfactory. There is every prospect that the price will be a remunerative one, and the great objection to its more extensive cultivation, the fact of the great amount of manual labour required in its manipulation, is being gradually done away with and labour-saving machinery is quickly simplifying its manufacture and productions. I am informed that a machine is now manufactured in Woodstock which makes as great a revolution in the culture of flax as the mowing machine made in the curing of hay. In this Province of ours, where our immense resources are but beginning to be brought to light, where the spirit of its people is but beginning to exert its energy towards the solution of the question of the future destinies of Canada and its position in the foreranks of civilization, it surely becomes us to give prominence and direct attention to any subject which may perchance assist the one and secure the other. Let no one calling himself by the well-loved name of a Canadian stay behind in the endeavour to contribute his mite towards making that name to be respected. For my own part could any act of mine—I will not say word, well knowing its feebleness—cause two spears of grass to grow where only one grew before, I shall be satisfied, and to that intent my constant efforts will be directed. I ask you, gentlemen, to take these last two subjects to which I have adverted into serious consideration, and by precept and example encourage the experiment of introducing them into general cultivation, for, if successful, you will have added two more pillars to prop up our national greatness. In his address at Toronto my predecessor in office treated you to an elaborate and exhaustive history of the progress and objects of the Board, over which I have had the honour for the last twelve months to preside. It would be superfluous for me to recapitulate what has been already and so much better said. He traced its course from the budding sapling to the stately tree it now resembles. I have only to add that its progress has so far been uninterrupted, and its prospects for the future still continue high. The balance remaining in our hands from last year amounted to $12.765. The Denison matter is proceeding in a satisfactory manner towards settlement, the Association holding good security by way of a guarantee for the amount of their claim, with interest at eight per cent.

The Veterinary School of Toronto, which is affiliated with this Association, is, I am happy to say, under the able management of Dr. Smith, progressing in an extremely satisfactory manner; the number of pupils entered for the course of instruction next session is thirty, second and third years students, besides a number of agricultural students, and the number who have graduated since 1866 is upwards of thirty. There is a prospect that, in a short time, every part of the country will be supplied with an educated, intelligent, and skilled class of veterinary surgeons, and that the care of the sickness and disease which from time to time assail our stock, now so much improved and valuable, will pass out of the hands of the country horse-doctor into those of the competent surgeon. With reference to the Entomological Society, the grant to that Society is still continued, with, I believe, the best possible results. The objects of that society being so similar to our own, they deserve every encouragement at our hands.

As to the question of the Government assuming the direction and control of this Association, I have only to endorse the conclusive arguments of my colleague, Mr. Christie, against any such course. I think it would be extremely injudicious for the Government to interfere in that way, and cannot see that any possible good would result from it; in fact, I would strongly deprecate any action on their part in that way. In the department of arts and manufactures, I am glad to see that the progress is commensurate with the requirements of the

country. Every branch has been fully and more than fairly represented, and we may well feel proud that Canada can boast of possessing such a body of artizans and mechanics as those who have contributed specimens of their handiwork at the exhibition. This is particularly noticeable in the department of agricultural implements, a trade which is rapidly assuming vast proportions, raising up huge factories, and giving employment to large numbers of our people. The labour question, always one of great difficulty, has lately so shaped itself as to tax all the ingenuity of our inventors and mechanics to devise expedients to enable the farmer who does not possess the necessary help within himself, successfully to carry on his business. Immediately that a really good labour-saving machine makes its appearance in the market, the demand exceeds the supply, and thus two classes are benefited, without the third, the labouring class, being in the least degree injured. In all the other manufactures of the country we find the same healthy tone. New industries are continually springing up, with our immense facilities for manufacturing—such as water-power, of which we possess an inexhaustible supply—and the rest being more and more developed. Our position in the geographical configuration of the earth seems to point us out as a large manufacturing people, and by uniting the two branches of agriculture and arts gives us a sure pledge for the future.

You will unite with me, Gentlemen, in reverentially thanking a beneficent Providence for His many mercies towards us during the past year. Our fields have literally, when tickled with the plough, laughed into the harvest. We may safely call this a good year, and following upon a comparatively poor one, it is all the more acceptable. In the section of the country which I more peculiarly represent, last season was an unusually dry one, and in the month of August, 1870, a disastrous fire swept over a large area, consuming everything before it, and leaving behind but a weary waste of blackened stumps and charred cinders to point where the hard-won home of the forest pioneer had once stood. Houses, barns, fences and crops, and in a few instances human life, in a short hour or two, all passed away as though they had never been. The sufferings of the people, now made outcasts, were something terrible. Deprived of their little all, they knew not what to do; but the hand of charity of their fellow-citizens was an open one, and almost immediately subscriptions came pouring in until they reached something over $70,000, the Government of the Province voting $25,000, and that of Quebec $3,000. The whole of the amount has been distributed to the sufferers, as appears by the report of the committee, a copy of which has been sent to each subscriber. The report speaks for itself, but I may add that, thanks to those liberal donations, to the recuperative farmers, to the people themselves, the burnt district has recovered from the blow, and out of evil much good has come.

We may congratulate ourselves, gentlemen, upon the results of this year's exhibition, and point to it as an indication of the generally healthy state of the country. It is said that Kingston is too far east for the holding of a completely successful exhibition, but certainly that statement has not been sustained by what we have seen during the past few days. But even if it were true, that would be no reason to abandon our present system. Our exhibitions are intended to be, so to speak, camps of instructions designed to show to the farmers and mechanics of every section of the Province all that was best in the several branches of industry. To do that effectually, and really to carry out the spirit of our organization we should, as far as possible, bring our exhibition withinthe reach of all. As a rule it is more equitable to require the exhibitors and prospective prize-takers to follow our exhibition, than to expect the mere spectator to do so. That question, however, is in your own hands, and it is for you to express an opinion.

Gentlemen,—Farmers and mechanics of Canada, blessed with free institutions, living under the freest constitution in the world, the destinies of your country are in your own hands. Yours is the task, under Divine Providence, of raising her to the level of the highest, or sinking her to the lowest ranks of civilization. Nature has endowed her with all the necessary requisites. Let art step in, and complete the picture of a prosperous, happy, and God-fearing people in a peaceful and plentiful land. Fill up the vacant gaps in your own sections, and then when the proper time comes, the rich, broad plains of the western prairies lie waiting to absorb your surplus population—a place where, under the broad ægis of the old-time flag, your sons and daughters may perpetuate British pluck, energy and institutions, and form a connecting link in that chain of peoples who, hailing from the glorious trio of sea-girt islands, have always pushed to the front wherever the rights of liberty, justice and equality were imperilled.

THE PROVINCIAL EXHIBITION OF 1872.

OFFICE OF THE AGRICULTURE AND ARTS
ASSOCIATION OF ONTARIO,
Toronto, November 1, 1872.

To the Hon. A. McKELLAR.
Commissioner of Agriculture,
&c &c.

SIR—I have the honour, on behalf of the Council of the Association, as required by the Amended Agricultural Statute, to present a brief report of the results of the Provincial Exhibition, held at Hamilton, on the 23rd to 27th September last, as compared with previous Exhibitions of the Association. The Statute requires that a report shall be presented, "containing such information as the Council may have been enabled to obtain of the progress made in the respective departments of the Exhibition as compared with the Exhibitions of previous years."

The Annual Provincial Exhibition has shown a steady progressive increase in the number and value of the animals and articles exhibited, and in the amounts distributed in prizes, from its first institution up to the present time. There may have been an occasional slight falling-off in some particular classes, as compared with the same classes in immediately preceding Exhibitions; but, taken in the whole, it may safely be stated that, as a general rule, each Exhibition has surpassed its predecessor in the extent and importance of the classes of live stock and other productions of the country shown. The Exhibitions of the last five years, collectively including the present year, have exceeded in extent and importance the Exhibitions of any previous five years in the history of the Association. I consider it sufficient, therefore, for the purposes of this report, to institute a comparison between the late Exhibition and those of the previous four years—thus going back to the year in which the Exhibition was previously held at the same point as this year, and embracing one complete circuit of the Exhibition at all the different cities at which it has been held under the system of rotation, which has been the practice for many years past.

The late Exhibition was highly successful. The amount offered in prizes, the entire number of animals and articles entered for competition, and the amount awarded in prizes, exceeded in the aggregate those at any previous Exhibition of the Association. The amount offered in prizes was $16,092.00, against $15,724.50 in 1871; $13,750.50 in 1870; $13,428.00 in 1869; and $13,394.50 in 1868. The amount actually awarded in prizes was $13,147.00, against $12,951.00 in 1871; $12,243.50 in 1870; $11,459.50 in 1869; and $11,120.00 in 1868. The number of entries was 7,714, against 6,682 in 1871; 6,597 in 1870; 7,649 in 1869; and 6,620 in 1868.

To glance very briefly at the details, the entries in nearly every one of the live stock classes, which are, perhaps, the most important to consider as an index of the progress and wealth of an agricultural country, either entirely surpassed those of any one previous year, or, if in one or two classes falling a little below some one previous year exceeded the average of the preceding four years. The quality of the stock, also, was of a very high order, indicating a steady improvement, and showing that the enterprising breeders of Ontario are determined not to lag behind in their efforts to reach the highest point of excellence attainable in this very important branch of agriculture. In the classes of draught horses especially, Durham cattle, long woolled sheep, and the small breeds of swine—classes of prime importance—the display was such as could hardly be surpassed in any country, and was considered by many competent judges to be superior to that on any previous occasion in this Province. Indeed, the constant accession of high-priced first class stock imported into the country through the enterprise and honourable rivalry of our leading breeders, must inevitably result in a very high standard in the choice animals brought forward at our Provincial Exhibitions.

In the class of Poultry, the entries greatly exceeded those on any previous occasion.

In Implements and Agricultural Machinery, the Exhibition was about equal to the average of the previous four years.

In Field Grains, Seeds, and Roots, there was a slight falling-off in the number of entries

and the quality of the articles, as compared with previous years—a fact no doubt attributable to the character of the season in Central Ontario, which was not favourable to the production of the finest samples of grains and roots.

In fruits, the entries were more numerous than on any previous occasion, and the very fine display of specimens, in each of the numerous varieties exhibited, was such as to convey to the spectator a highly favourable opinion of the fruit producing capabilities of the Province.

In the Arts and Manufactures department, a few of the classes were, perhaps, not so well represented as on some previous occasions, but the Exhibition in this department was on the whole of a highly interesting and instructive character. It is to be regretted that our leading manufacturers and artizans do not to a greater extent avail themselves of the opportunity the Exhibition affords them to permit the public to witness the rapid advances made in the various manufacturing and artistic products of the Province.

I beg leave to submit the subjoined tabular statement, similar to that presented at this time last year, which will show at a glance the amount offered in prizes, the amount actually awarded, and the number of entries in each class, at the late exhibition; also, for convenience of reference, the number of entries in each class at each of the four previous Exhibitions.

Financially the Exhibition was fairly successful. The total amount received from members' subscriptions, sale of catalogues, [illegible] refreshment stands, admission fees, and materials sold after the Exhibition was $16,261 77, against $7,593 51 from the same sources at Kingston in 1871; $20,800 05 at Toronto in 1870; $18,527 93 at London in 1869, and $12,210 68 at Hamilton in 1868.

I have the honour to be,
Sir,
Your most obedient servant,
HUGH C. THOMSON,
Secretary.

RESULTS of the Exhibition of 1872, showing the Amount offered in Prizes, the Amount awarded, and the number of Entries in each Class: also, the number of Entries in 1871, 1870, 1869, and 1868.

CLASSES	Amount offered, 1872.	Amount awarded, 1872.	No. of entries at Hamilton, 1872.	No. of entries at Kingston, 1871.	No. of entries at Toronto, 1870.	No. of entries at London, 1869.	No. of entries at Hamilton, 1868.
	$ c	$ c					
Blood Horses	297 00	204 00	24	22	26	20	16
Road, or Carriage Horses	563 00	563 00	362	266	219	312	235
Agricultural Horses	426 00	416 00	171	103	137	137	134
Heavy Draught Horses	376 00	327 00	123	71	89	74	69
Durham Cattle	709 00	709 00	269	149	188	131	127
Hereford Cattle	559 00	401 00	34	24	27	25	33
Devon Cattle	559 00	464 00	71	78	71	76	73
Ayrshire Cattle	559 00	559 00	154	235	127	50	81
Galloway Cattle	495 00	395 00	47	47	52	55	70
Grade Cattle	229 00	229 00	63	73	41	76	46
Fat and Working Cattle	365 00	325 00	39	33	38	52	33
Prince of Wales' Prize	60 00	60 00	9	8	6	3	14
Cotswold Sheep	312 00	312 00	203	161	155	90	135
Leicester Sheep	312 00	312 00	277	176	167	306	336
Lincoln Sheep	105 00	105 00	50				
South Down Sheep	196 00	196 00	106	77	61	70	96
Shropshires, Hampshires, &c.	128 00	118 00	24	17	16	18	33
Merino Sheep	128 00	128 00	56	61	61	60	98
Fat Sheep	96 00	92 00	35	36	25	26	22
Improved Berkshires	166 00	166 00	135	124	74	94	48
Suffolk Pigs	146 00	146 00	55	50	50	49	29
Essex Pigs	146 00	146 00	36	35	26	53	39
Other Small Breed Pigs	146 00	136 00	35	37	26		
Yorkshire and other Large Breed Pigs	146 00	136 00	19	63	33	64	84
Poultry	321 00	294 00	528	393	257	418	342
Agricultural Implements for Tillage	660 00	377 00	165	124	262	271	203
Do do for Harvesting, &c.	646 00	583 00	147	172			
Implements and Tools for hand use	330 00	142 00	118	125	165	237	156
Field Grains, Hops, &c.	483 00	465 00	294	501	325	614	462
Small Field Seeds, Flax, &c	191 00	124 00	75	117	74		
Field Roots, &c	170 00	159 00	366	366	344	683	440
Dairy Products, Honey, &c.	297 00	281 00	122	162	144	193	177
Domestic Wines	96 00	88 00	36	72	98	84	550
Fruit, Professional Class	229 00	102 00	59				
Do. General Class, Apples, Pears, &c	229 00	220 00	692	525	814	501	
Do. Do Plums, Peaches, &c.	257 50	240 50	430	213			
Garden Vegetables	160 50	165 00	458	340	450	760	453
Plants and Flowers	200 50	150 00	158	136	118	261	121

RESULTS of the Exhibition of 1872.—*Continued.*

CLASSES.	Amount offered, 1872.	Amount awarded, 1872.	No. of entries at Hamilton, 1872.	No. of entries at Kingston, 1871.	No. of entries at Toronto, 1870.	No. of entries at London. 1869.	No. of entries at Hamilton, 1868.
Miscellaneous, Cattle Food, Artificial Manure, &c				3	12	3	10
Cabinet Wares, &c	257 00	85 00	50	67	79	61	77
Carriages, Sleighs, &c	263 00	133 00	57	70	112	144	86
Chemical Manufactures, &c	108 00	22 00	26	12	31	20	29
Drawings, Engravings, &c	312 00	207 00	72	58	86	82	75
Fine Arts, Oil Paintings, Photography, &c	467 00	399 00	146	75	170	124	294
Do Water Colours, Pencil, &c	407 00	355 00	238	209	245	168	197
Groceries and Provisions	161 00	132 00	76	70	47	76	74
Ladies' Work, Braiding, Embroidery, &c	117 50	137 50	247	327	282	212	235
Do Flowers, Wax, Worsted, &c	120 00	136 00	155	150	160	151	215
Machinery, Castings, &c	572 00	411 00	109	37	150	116	149
Machines, Sewing and Knitting	84 00	77 00	45	23	51	27	
Metal Work, including Stoves	360 00	299 00	142	89	230	161	85
Musical Instruments	201 00	108 00	53	26	37	28	29
Natural History	176 00	90 00	18	29	28	19	13
Paper, Printing, Penmanship, &c	108 00	56 00	40	18	56	30	31
Saddlery, Engine Hose, &c	259 00	141 00	43	36	90	70	76
Shoe and Bootmakers' Work, Leather, &c	177 00	55 00	17	25	82	91	57
Woollen, Flax and Cotton Goods, Furs, &c	448 00	311 00	135	163	183	203	133
Totals	16092 00	13142 00	7714	6682	6897	7649	6620

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (C).

REPORT OF THE ASSOCIATION OF MECHANICS' INSTITUTES OF ONTARIO; AND ANALYSIS OF REPORTS OF MECHANICS' INSTITUTES.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (C).

REPORT OF THE ASSOCIATION OF MECHANICS' INSTITUTES OF ONTARIO; AND ANALYSIS OF REPORTS OF MECHANICS' INSTITUTES.

ASSOCIATION OF MECHANICS' INSTITUTES OF ONTARIO.

Toronto, October 24th, 1872.

SIR,—I have the honour herewith to enclose to you, in accordance with section 24 of the Agricultural and Arts' Act, a copy of the report of the Executive Committee, and of the proceedings of the Association at its annual meeting, held in the City of Hamilton, on the 25th of September, of the present year.

I have the honour to be,
Sir,
Your obedient servant,

W. EDWARDS.
Secretary—Treasurer.

The Hon. ALEX. McKELLAR,
Commissioner of Agriculture and Public Works, Province of Ontario.

(Circular).

ASSOCIATION OF MECHANICS' INSTITUTES OF ONTARIO.

Toronto, October 21st, 1872.

SIR,—I beg to forward to you the annexed copy of the proceedings of the Annual Meeting of the Association, with the Report of the Executive Committee, and Programme (Appendix A.) of Studies and Examinations of Pupils of Affiliated Mechanics' Institutes, as submitted for the consideration of the Delegates at the Annual Meeting; and also a Paper (Appendix B.) "On the best method of Classification of Books in the Catalogues and on the Shelves of Mechanics' Institutes' Libraries, and the best system of recording the books taken out and returned by the members."

You will observe that the Report was adopted by the Meeting, but the Programme of Studies and Examinations was "re-committed to the Executive Committee," for modification. It is not brought under your notice as first prepared, but when re-printed it will be again submitted to you, in accordance with the resolutions of the Annual Meeting; you will then be invited to give it your most careful consideration, and to make any suggestions that you may deem necessary to the efficiency of the proposed scheme.

I beg also to call your attention to the action of the meeting, in instructing the Executive Committee to memorialize the Government for amendments to the Agricultural and Arts' Act and respectfully invite from your Board of Directors such an expression of opinion as they may see fit to offer, with a view to such opinions being considered and acted upon before the next meeting of the Provincial Legislature.

I beg again to remind you that the time for making application for Legislative aid is limited to the first of December next, and that all the provisions of the Statute relating to Mechanics' Institutes must be complied with, so as to entitle any Institute to such aid.

I have the honour to be,
Sir,
Your obedient Servant.
WM. EDWARDS,
Secretary-Treasurer.

To the President of the Mechanics' Institute.

ASSOCIATION OF MECHANICS' INSTITUTES OF ONTARIO.

City of Hamilton, September 25th, 1872.

The Annual Meeting of the Association was held this Evening, at the Court House, at 7-30 o'clock; the President, James Young, Esq., M. P., in the Chair.

Credentials of Delegates from the following Mechanics' Institutes were submitted and approved:

AYR—Matthew Aldgate, Esq.
BRANTFORD—Wm. Watt, Esq., and the Rev. W. Cochrane.
BRIGHTON—Peter Begg, Esq.
CLINTON—Horatio Hale, Esq.
DUNDAS—John Bertram, Esq.
GALT—James Young, M. P., Esq.
GRIMSBY—Rev. T. B. Reed, and Rev. J. G. Murray.
GUELPH—David McCrae, Esq., and Chas. Raymond, Esq.
HAMILTON—Judge Logie, and Andrew T. Wood, Esq.
HESPELER—Charles Karch, Esq., and C. F. Cliff, Esq.
LONDON—John Siddons, Esq., and Thomas Green, Esq.
MEAFORD—Jos. Clelland Esq.
NEWMARKET—E. Jackson Esq.
PETERBOROUGH—Wm Robertson, Esq.
PRESTON—Abraham Bowman, Esq.
ST. CATHARINES—J. C. Rykert, M. P. P., Esq., and Calvin Brown, Esq.
ST. MARY'S—John H. Gould, Esq., and Wm. Laing, Esq.
STRATFORD—W. Buckingham Esq., and Thomas Ballantyne, Esq.
THOROLD—John Morley, Esq., and George Baxter, Esq.
TORONTO—M. Sweetnam, Esq., and Thomas Davison, Esq.
VITTORIA—W. R. Sherman, Esq.
WOODSTOCK—Wm. Nasmyth, Esq., and T. H. Parker, Esq.

The Secretary read the Minutes of the previous Annual Meeting of the Association, which were approved as correct.

Mr. McCrae moved, seconded by Mr. Begg,—"That the Report be adopted." In do-

ing so. Mr. McCrae explained the nature of the Examinations proposed in the Programme annexed to the Report.

After a long and interesting discussion, it was moved by Mr. Jackson (in amendment), seconded by Mr. Nasmyth and Resolved.—"That the Report only be adopted, and that the Appendix be considered separately."

Moved by Mr. McCrae, and seconded by Mr. Begg,—"That the studies named in Section I. of the Programme be adopted."

Moved by Judge Logie (in amendment), and seconded by the Rev. Dr. Reed—"That all the subjects of studies named in Sections I. to V. be adopted, with the understanding that the Executive Committee . now to be elected, be empowered to modify and simplify the Programme of Studies and Text Books."

Moved by the Rev. Mr. Cochrane (in amendment to the amendment), and seconded by Mr. Buckingham,—"That the Programme be re-committed to the Executive Committee to make such modifications as may be deemed advantageous in view of the opinions now expressed—said modified programme to be printed and submitted to the various Mechanics' Institutes, who shall report to the Executive Committee on or before 1st May next, in order that the scheme so modified and matured may be submitted at the next Annual Meeting."

The vote being taken upon the last amendment, it was declared carried by a majority of three.

The President now called upon the Secretary to read a paper, "On the Classification and Recording of Books in the Libraries of Mechanics' Institutes."

The paper having been read, Judge Logie spoke of the excellency of the system, as had been experienced by the Hamilton Mechanics' Institute.

It was moved by Mr. Jackson, seconded by Mr. Hale, and Resolved,—"That the thanks of the Association be given to Mr. Edwards for the valuable paper now read; and that it be printed with the Annual Report and Proceedings."

Moved by Mr. Hale, seconded by Mr. Siddons.—"That inasmuch as Mechanics' Institutes are now public institutions, forming a part of the educational system of the Province, and, as such, receiving Government aid and subject to inspection by the County Inspectors of Public Schools; and inasmuch as the advantages which they offer are open to all at a trifling annual fee, it is just and proper that each Municipality in which a Mechanics' Institute is established, receiving Government aid, should be required by law to contribute to the Institute an amount equal to at least half the sum granted to the Institute by the Government: more especially as such local aid is absolutely essential to enable the smaller Institutes to carry out efficiently the useful purposes for which they were established; and that a committee be appointed to prepare and present a petition for the enactment of such an amendment of the existing law as will secure this object."

Several members spoke of the restrictions connected with the Government Grant, which renders it impossible for many Institutes to avail themselves of it. After a long discussion the resolution was withdrawn, and it was

Moved by Mr. Brown, seconded by Mr. Raymond, and Resolved.—"That the Executive Committee be requested to memorialize the Government in relation to the Agricultural and Arts' Act, pointing out its defects, and suggesting amendments in the direction of removing certain restrictions connected with the grants to Mechanics' Institutes, and for such other amendments as may seem to be desirable."

Moved by Mr. McCrae, seconded by Mr. Begg, and Resolved,—"That the President of this Association be requested to bring before the Council of the Agricultural and Arts' Association, the desirability of providing at the next Provincial Exhibition, Shafting and Boiler Power sufficient to furnish the exhibition with Machinery in motion."

Nominations for office-bearers for the ensuing year were then made, *viva voce*, and the ballot being taken, the following gentlemen were declared elected:

President—James Young, M. P., Esq., Galt.

Vice-President—Rev. Wm. Cochrane, Brantford.

Secretary-Treasurer—Wm. Edwards, Esq., Toronto.

Executive Committee—David McCrae, Esq., of Guelph; Judge Logie, of Hamilton; M. Sweetnam, Esq., of Toronto; and J. C. Rykert, M. P. P., Esq., of St. Catharines.

On motion of Mr. Jackson, seconded by Mr. Rykert, a vote of thanks to the Office-bearers for the past year was adopted, when the meeting adjourned.

W. EDWARDS, *Secretary.*

REPORT.

The Executive Committee beg to present the Fourth Annual Report:

During the past year, forty-three Institutes became affiliated with this Association, by participating in the Legislative Grant, and paying five per cent. thereof to the Treasurer, in accordance with the requirements of the Statute. The following list shows the number of Institutes, and to what extent they have availed themselves of the Government Grants, for the years 1869, 1870 and 1871. Several applications have been made for Grants for this year, but the list will not be complete until the first of December next—the date to which the reception of applications is limited:

INSTITUTES RECEIVING GRANTS.

Name.	1869.	1870.	1871.
Ayr Mechanics' Institute	$ 41.84	$167.00	$400.00
Barrie "			400.00
Berlin "	103.48	137.14	306.40
Bowmanville "	125.00	150.00	
Bradford "			200.00
Brantford "	100 00	200 00	400.00
Brampton "		30.00	292.00
Brighton "	100.00	50.00	120.86
Clinton "		200.00	122.58
Collingwood "		100.00	400 00
Columbus "			200.00
Dundas "	200.00	200.00	400.00
Elora "			400.00
Grimsby "			400.00
Galt "	100.00	100.00	400.00
Greenwood "			112.00
Guelph "			293.00
Hamilton "	200.00	200.00	400.00
Hespeler "			400.00
Ingersoll "			400.00
Kincardine "			170.00
Kingston "	200.00		
London "			400.00
Meaford "	107.59	50.00	150.00
Merrickville "	63.00	50.00	
Mitchell "	100 00		
Milton "	50.00		100.00
Mount Forest "		41.88	125.50
Newmarket "	30.00		
Niagara "			400.00
Oshawa "	200.00		
Port Perry "			400.00
Paris "	150.00	100.00	200.00
Port Elgin "		100.00	131.70
Peterborough "	200.00	200.00	400.00
Preston "			400 00
Renfrew "			00.00
Richmond Hill "		52.68	70.00
Seaforth "	200.00		170.00
Schomberg "	30.00		
Streetsville "	197.00	200.00	400.00
Smith's Falls "	40.00	60.00	150.00
Simcoe "			400.00
Stratford "	119.50		250.00

Name.	1869.	1870.	1871.
St. Catharines Institute			400.00
St. Mary's "		109 00	400.00
Toronto "	200.00	200.00	400.00
Thorold "	100.00	100.00	400.00
Vittoria "			234.00
Whitby "	150.00		
Woodstock "	200.00	150.00	400.00
Totals	$3307.41	$2947.70	$12598.04

During the year, seven Institutes have subscribed for the "Bookseller" and the "American Literary Gazette." The first has been regularly supplied, but the issue of the latter ceased at the beginning of the year, and was merged in a New York Trade Circular—a publication not deemed to be suited to the wants of the Institutes.

With a view to encourage the formation of Evening Classes, your Committee's predecessors suggested to the last Annual Meeting the advisability of establishing "a system of "Examinations of Members of Mechanics' Institutes, and of Mechanics' Institutes' Evening "Classes, on a similar principle to that formerly used by the late Board of Arts and Manu-"factures for Upper Canada; and that prizes should be offered by this Association to a limited "number of Members of these Institute Classes, whose Examinations shall come up to a "prescribed standard."

After full discussion, it was Resolved,—"That if the Executive Committee deem it "desirable to establish Examinations and Prizes, as proposed in the Annual Report, during "the ensuing year, they are hereby authorized to do so."

As the season was so far advanced when this Resolution was adopted, and no scheme for the Examinations had been prepared, it was not thought desirable to proceed with them for this year.

A programme of Studies and Examinations, and of Prizes to be offered, is appended to this Report, for your consideration and approval.

Since the Association last met, the Legislature has made some amendments to the Agricultural and Arts' Act, affecting to some extent the interests of the Mechanics' Institutes, and of this Association.

Clause 5th of the amended Act provides that no Institute shall be entitled to participate in the Grants, until the year next succeeding its formation, nor unless notice of such formation has been given to the Commissioner of Agriculture, prior to the first day of December next.

Clause 6th provides for the periodical Inspection and Audit of the Affairs of the Institutes receiving Grants, and a Report thereon by the County Inspector of Schools.

Clause 7th provides that no Institute will be entitled to the Grant unless the provisions of the several Acts relating to Mechanics' Institutes have been complied with.

Clause 9th provides that no Institute organized after the first of January, 1872, shall be entitled to share in the Government Grant, except those organized in Cities, Towns, or Incorporated Villages; and no more than one such Institute in any City, Town, or Incorporated Village shall share in such Grant.

The Treasurer's statement shows total receipts, including balance from last year, $456.90; expenditure for the year, $176.40; balance in hand, $280.50. The sum of $113.74 also remains due by Institutes, upon their Grants, for 1870 and 1871.

TREASURER'S DETAILED STATEMENT OF RECEIPTS AND EXPENDITURE.

1871.	Dr.	$ c.
September	27.—To Balance in hand	154 22
October	26.—To Thorold Mechanics' Institute for "Bookseller"	1 50
"	26.—To Paris " "	1 50
"	26.—To Ayr " "	1 50

				$ c.
1871.				
"	26.—To Do.	" 5 p. ct. on Grant for 1871		20 00
"	26.—To Milton	" " "		5 00
"	26.—To Greenwood	" for " Bookseller" "		1 50
November	1.—To London	" 5 p. ct. on Grant for 1871		20 00
"	7.—To Streetsville	" " "		20 00
"	28.—To Meaford	" " "		3 75
"	28.—To Richmond-hill	" " "		3 50
December	9.—To St. Catharines	" "		20 00
1872.				
January	9.—To Stratford	" " "		12 50
"	12.—To Simcoe	" " "		20 00
"	19.—To Collingwood	" " "		20 00
"	19.—To Do.	" for " Bookseller" "		1 50
April	29.—To Elora	" 5 p. ct. on Grant for 1871		20 00
May	6.—To Berlin	" " "		15 25
"	17.—To Port Perry	" " "		20 00
"	20.—To Clinton	" " "		6 13
January	12.—To Woodstock	" " "		20 00
"	12.—To Niagara	" " "		20 00
"	12.—To Brighton	" " "		6 05
"	12.—To Niagara	" for " Bookseller" "		1 50
"	12.—To Hespeler	" 5 p. ct. on Grant for 1871		20 00
"	12.—To Brampton	" " for 1870		1 50
"	12.—To Preston	" " for 1871		20 00
				$456 90

1871.	Cr.	$ c.
September	27.—To Barker's Account for Printing	2 25
November	2.—To McLeish and Co. "	11 50
1872.		
"	To Copp, Clark and Co. for "Bookseller"	22 00
"	To McLeish and Co., for printing	5 75
"	To Postage account for the year	6 85
"	To Executive Committee—Expenses attending Meetings	28 05
"	To Secretary's and Treasurer's remuneration for 1872	100 00
"	To Balance in hand	280 50
		$456 90

APPENDIX A.

PROGRAMME OF STUDIES AND EXAMINATIONS.

(Proposed Circular to Institutes.)

To ———, *President Mechanics' Institute,* ———.

Sir,—This Association has determined to hold periodical Examinations, of such members of the various Affiliated Mechanics' Institutes as choose to avail themselves of them; and to award Diplomas to the successful pupils, under the rules and regulations hereafter laid down: the object being to encourage the establishment of Evening Classes in the Affiliated Institutes, and to reward efforts made by the industrial classes for self improvement.

These Examinations will be open to all members of Affiliated Institutes, or of their classes, who are not Students of any College, Graduates or under graduates of any University, or certified School Teachers; or who are not following any of the learned professions.

Copper-plate Certificates of three grades, printed on parchment, will be awarded to successful candidates; indicating "Excellence," "Proficiency," and "Commendableness." In addition to these Diplomas, the Association will award three prizes, of the value of $10, $6, and $4, respectively, to any affiliated Mechanics' Institute establishing an Evening Class or Classes, with an average attendance of not less than 12 members, and of not less than 25 instruction meeting, on separate evenings—the prizes thus offered to be awarded as *first*, *second* and *third* prizes for *general proficiency* in all the subjects named in the programme, amongst the members of the class or classes of each respective Institute, and by examinations based upon papers to be provided by this Association; thus, while the competition for the latter prizes will be confined to the pupils in each respective Institute, the awards of Diplomas will be based solely upon the merits of the candidates, as shown in their respective examination papers, and without regard to the Institute with which they may be connected.

The subjects proposed for Examination this year are not numerous, but are very important to those engaged in Industrial pursuits, viz.:—

I. English Grammar and Composition.
II. Arithmetic, Geometry and Mensuration.
III. Principles of and Practical Mechanics.
IV. Chemistry and Experimental Philosophy.
V. Geometrical and Decorative Drawing and Modelling.

LOCAL COMMITTEES.

1. The Directors of Affiliated Mechanics' Institutes desirous of co-operating with this Association in promoting the education of their members, by means of instruction in evening classes or schools, or other means of self improvement, are invited to form local committees for the purpose of conducting the necessary preliminary examinations; and to co-operate with the examiners appointed by the Association. Each local committee must consist of at least three members, and should be composed of such persons as would give their time and earnest attention to the subject.

2. The local committees will supervise the working of papers, which the examiners appointed by the Association will set for the final examination.

PRELIMINARY EXAMINATIONS BY LOCAL COMMITTEES.

3. No candidate will be admitted to the final examination without a certificate from his local committee, that he has satisfactorily passed a preliminary examination in the subject or subjects in which he wishes to be examined by the Association.

4. The preliminary examinations may be either wholly written, or partly oral and partly written, as each local committee may think best, and must be held sufficiently early in the year to allow the results to be communicated to the Secretary of the Association, on or before the first day of May, 1873.

5. The "pass" to the final examination should not be given to any candidate whom a local committee consider not to have a reasonable chance of obtaining a Diploma or prize from the Association.

FINAL EXAMINATION BY THE EXAMINERS APPOINTED BY THE ASSOCIATION.

6. Forms containing the names of the candidates "passed" by the local committee, and the subjects in which they wish to be examined, must be returned to the Secretary of the Association, not later than the first day of May, 1873.

7. The examiners appointed by the Association will set the requisite papers for the final examination, and these will be forwarded to the local committees. The local committees will see, and certify to the Association, in the form which the Secretary will furnish, that the papers are fairly worked by each candidate without copying from any other, and without books or other assistance; and will return the worked papers to the Association.

8. The final examinations will be conducted by the means of printed papers.

9. The examiners will award Diplomas of three grades, but those of the first grade will be awarded only to a high degree of excellence.

10. The final examinations will be held simultaneously on the evenings of Tuesday, Wednesday, Thursday and Friday, of the third week in May next.

11. Judgment will be passed by the examiners appointed by the Association, and the awards of Diplomas and prizes will be communicated to the respective local committees.

12. To indicate the portions of the subjects that will be taken in the examination, certain text books are suggested for some of the departments. In other departments where no text books are named, the treatises in general use in the schools and colleges in the Province of Ontario, are recommended; but it is distinctly to be understood that in so doing no opinion is pronounced as to their comparative merits. Real knowledge, however or wherever acquired, will be accepted; and the exposition of a subject in the candidates' own words will be preferred by the examiners.

I.—ENGLISH GRAMMAR AND COMPOSITION.

Gramatical Analysis of sentences in Prose and Poetry; Composition on a given subject.

II.—ARITHMETIC, GEOMETRY AND MENSURATION.

Arithmetic.—Fundamental rules of Arithmetic: Proportion, Simple and Compound; Practice; Interest; Fractions, Vulgar and Decimal; Extraction of Square and Cube Roots.

The Examiners will take into account not only the correctness of the answers, but the excellence of the method by which they are worked out.

Geometry.—A facility in solving geometrical theorems, and problems deducible from the four first books of Euclid, will be expected on the part of those who desire to obtain certificates of the first or second class.

Text books—Euclid, Books I, II, III, & IV.

Mensuration.—The calculation of the areas and circumferences of plane figures bounded by right lines or arcs of circles. The superficial and solid contents of cones, cylinders, spheres, &c. Measuring and estimating artificers' work.

III.—PRINCIPLES OF, AND PRACTICAL MECHANICS.

Principles of Mechanics.—The properties of matter, solid, fluid and gaseous,

Statics: The composition, resolution and equilibrium of pressures acting on a material particle; constrained particles; machines; attractions.

Dynamics; gravitation; collision; constrained motions; projectiles; oscillations.

Rigid Dynamics: Motion of a rigid body round a point; of a free rigid body; of a system of rigid bodies.

Hydrostatics: Pressure of fluids; equilibrium of floating bodies; specific gravity; elastic fluids; machines; temperature and heat; steam; evaporation.

Hydrodynamics: Motion and resistance of fluids in tubes, &c., waves and tides.

Pneumatics: Mechanical properties of the air; the barometer.

Text Book—Silliman's Natural Philosophy.

Practical Mechanics.—The applications of the Principles of Mechanism to Simple Machines. The Steam Engine.

Text Books—Lardner on the Steam Engine; Nasmyth's Elements of Mechanism, with remarks on Tools and Machinery (*Weale*); Bourne's Catechism of the Steam Engine.

IV.—CHEMISTRY AND EXPERIMENTAL PHILOSOPHY.

Physical: Elementary laws of heat, light and electricity, in connection with chemical action.

Inorganic: Chemistry of the Metalloids and Metals, laws of combining proportions, volumes of Gases, vapours, &c.

Organic: Composition properties and decompositions of alcohols, acids, &c.

Candidates are expected to be able to explain decompositions by the use of symbols.

Questions illustrative of general principles will be selected from the following, amongst other trades and manufactures: Metallurgy of Lead, Iron and Copper: Bleaching, Dyeing, Soap-boiling, Tanning; the manufacture of Coal Gas, Sulphuric Acid, &c.

Text Books—Fownes' Manual of Elementary Chemistry; Croft's Chemistry; Elements of Chemistry (*Chambers' Educational Course*); Tyndall's Lectures on Heat.

V. GEOMETRICAL AND DECORATIVE DRAWING AND MODELLING.

Orthographical Projection, or Geometrical Drawing of Architectural or Engineering subjects, Machinery, &.

Linear Perspective.

Original Designs.

Models of figures, groups, foliage, &c., connected with the Fine or Decorative Arts.

The local committees will select, and forward to the Association such specimens of Drawing and Modelling as they may deem worthy, and which they shall certify to be the work, solely, of the candidate named, who may not be an artist by profession.

FINAL EXAMINATION.

Every candidate for examination must be "passed" by a local committee, and must be a member of, or student of a class in, an Affiliated Mechanics' Institute in the Province of Ontario.

14. The examinations will be held at the rooms of the respective institutions reporting candidates. Instructions as to the particular evenings upon which the respective subjects will be taken up, and all the necessary forms for returns to the Association will be furnished by the Secretary, so soon as candidates are reported by any local committee.

All which is respectfully submitted.

JAMES YOUNG.
President.
WILLIAM EDWARDS.
Sec.-Treasurer.

Hamilton, September 25th, 1872.

APPENDIX B.

Paper read by the Secretary (MR. W. EDWARDS.) *before the Annual Meeting of the Association, held in the Court Room, City of Hamilton, on Wednesday Evening, September 25, 1872.*

ON "THE BEST METHOD OF CLASSIFICATION OF BOOKS IN THE CATALOGUES, AND ON THE SHELVES OF MECHANICS' INSTITUTES' LIBRARIES."

GENTLEMEN:

At this late hour, and as other important business is yet to come before you this evening, I propose to take up but little of your time in preliminary remarks, but will at once proceed to lay before you, as requested to do by a resolution adopted at your last Annual Meeting, what I consider the best known system for classifying the books in the catalogues, and on the shelves, of circulating libraries; so that works on any subject may readily be found, that shelf space may be economised, and that neatness and uniformity in their arrangement may be secured.

In visiting some Mechanics' Institutes, I have observed on their shelves an attempt at classification of books by subjects, and have seen a 12mo. or an octavo placed alongside a quarto or folio volume—thus giving a disorderly appearance to the books, and absorbing far more shelf space than is necessary.

During the first few years of my connection with the Toronto Mechanics' Institute, the books were arranged on the shelves, and in the printed catalogue, according to sizes, and without any regard to subjects—large folios bearing on their backs the initial letter A., and being numbered from 1 onwards, consecutively, to whatever number was required; small folios

were lettered B., large quartos C., small quartos D., large octavos E., and so on: works of reference bearing the initial letters W. R. Subsequently they were arranged in the printed catalogue according to subjects, whilst the *uniform size* arrangement was continued on the shelves. A manuscript catalogue was then, and still is, kept of all the books, according to the initial letters, so as to correspond with the numbering of the books on the shelves.

In framing a new catalogue, in the year 1867, the Directors adhered mainly to the system of arranging by sizes, while at the same time securing, sufficiently for all practical purposes, a classification of works according to subjects.

The books, both in the printed catalogue and on the shelves, are now arranged in sections, from I to XI., as follows:

SECTION I.—Biography.
" II.—History (Civil).
" " " (Natural).
" " " (Religious.)
" III.—Novels and Tales.
" IV.—Poetry and the Drama.
" V.—Periodical Literature—Reviews, Magazines &c.
" VI.—SCIENCE, ART, &c.:
Agriculture, Botany and Gardening.
Architecture and the fine Arts—Decorative Art—Music.
Geography, Topography, &c.
Geology, Mineralogy, &c.
Legal and Political Science, Political Economy;
Civil Engineering—Manufacturing, Trades, Commerce—Mercantile Arts.
Chemical and Medical Science, Physiology, Phrenology, &c.
Moral and Intellectual Philosophy, Education, &c.
Nat'l Philosophy, Astronomy, Mathematics, &c.
Science and Art, General.
SECTION VII.—Voyages and Travels.
" VIII.—Miscellaneous.
" IX.—Religious Literature.
" X.—Library of Reference.
" XI.—Valuable Illustrated Works, &c.

Each of these Sections is arranged on the shelves according to the sizes of the books, and in the printed catalogue the books in each Section (without reference to the sub-division of the Sections) are alphabetically arranged, the initial letter and No. of each preceding the title of the book. The volumes in Section I., Biography are generally found to be octavos, and 12 and 24mos., and bear on their backs, respectively, the initial letters A. B. & C.; Section II., History, bears the initial letters D. E. & F., and so on to the end of the Alphabet—Section IX. having but two divisions, and Section X. and XI. being designated by double initial letters on their backs. The books in each section, in the printed catalogue, being arranged alphabetically, either by the authors* or subjects, the initial letters and numbers do not follow each other in regular order: this, however, is no disadvantage to the person selecting books. Thus we have in Biography:

B. 294 Abernethy, (Dr.) Life of.
C. 250—Alexander the Great, Life of.
A. 13 Arnold, (Dr.) Life of

The advantages attending this system of using initial letters, to designate the different sizes of books, in the several Sections, must be apparent to those having charge of circulating libraries, from the facilities it affords for the consecutive numbering of works on the shelves, and the recording and tracing books taken out. There is, however, in my opinion, one defect still remaining in the classification, which requires to be corrected. The bound volumes of "Periodical Literature", such as *Blackwood's Magazine* or *All the Year Round*, and similar works in Section V., are now arranged in their respective divisions, according to their sizes. Blank numbers are left, to be filled in by new volumes added from year to year—say for ten years ahead. This leaving of blanks on the shelves is objectionable, and at the expiration of ten or any given number of years, the blanks are filled up, and the succeeding volumes must commence their numbers some distance ahead in the division of the Section. I would suggest

* Only in cases where the author has a number of books, does the author's name alphabetically occur.

that each work in the Periodical Section should have a double initial letter, and consecutive numbering, that is to say: *Once a Week* should have on its back the letters (a. a.), *All the Year Round*, (b. b.), and so on. The numbering of each separate work would then go on continuously, for any number of years, and the three initial letters now used in Section V. would be available for other divisions, if required.

We will now speak of the *Record* book, and in considering the plan upon which it is prepared, the advantages of the system of initial letters will be more apparent. You will pardon me for saying, in passing, that this system of recording was first suggested and brought into use by my late respected brother, Mr. Robert Edwards, while acting as Librarian for the Toronto Mechanics' Institute.

This RECORD BOOK is prepared in two distinct divisions, the first having one or more pages for each of the initial letters and progressive numbers, in the respective sections; the second division containing an alphabetical list of the members taking out books—each member's name having a consecutive number, so that in exchanging and recording the books, the number of the member *only* is necessary for the Librarian to know; and this is indicated to him by the initial letter and number on the back of the book—the corresponding letter and number in his Record Book having the member's number entered underneath. The first division of the record book is ruled so as to contain 25 or 50 numbers on each page from left to right; and the second division is ruled so as to give spaces for either 25 or 50 names, and numbers from the top to the foot of the page, as may be deemed most convenient; and is also ruled in spaces in the same direction, for recording the dates on which the books are taken out. The method of entering the books taken out, and cancelling these entries when they are returned, will be best understood by the following diagrams, of which enlarged copies are seen suspended on the walls of this room. These diagrams are prepared for weekly records only; but the Toronto Mechanics' Institute now uses a book ruled and headed for daily entries. This is a mere detail, which does not affect the system.

THE DIAGRAMS.

(1st Division.)

A

1	2	3	4	5	6	7	8	9	10	11	12
3		1		-1-		-6-					

B

1	2	3	4	5	6	7	8	9	10	11	12
	4		5		2			6			

(2nd Division.)

For week commencing .....

No.	1872. NAME.	JULY. 7	14	21	28	AUGUST. 4	11	18	25	SEPTEMBER. 3	10	17	24	OCTOBER.			
1	Young, James ...	~~A—5~~	B. 3														
2	Morley, John.	B. 6															
3	Rykert, J. C.....	A. 1															
4	McCrae, D..	B. 2															
5	Begg, Peter.....	B. 4															
6	Fenson, John ...	~~A—7~~	B. 9														

It will thus be seen that James Young takes out book A. 5, which is charged to him under date of July 7th —the librarian then turns to the 1st division of the book, and under A. 5 enters the number 1 of the 2nd division of the book, which is James Young's number John Morley takes out book B. 6, and the librarian goes through the same routine of entries. The same occurs with Nos. 3, 4, 5, and 6, or with the numbers of any other members on the roll. While the book A. 5 is in the possession of James Young, another member enquires for it. The librarian is under no necessity of going to the shelf to see if A. 5 is in, but turning to that letter and number in the 1st division of the record, he finds it is charged to No. 1, when, if necessary, turning to No. 1 in the 2nd division of the book, he finds that No 1 is James Young's number, and that he has the book. A. 5 is now brought in, and the librarian turns to that initial letter and number in the 1st division of the book, and cancels entry thereunder of No. 1; he then turns to No. 1 in his members' roll, and cancels the record against James Young of the book A. 5. A third party enquires for B. 7, the librarian turns to that letter and number in he 1st division of his Record Book, and finds that it is not charged to any one, and, should, therefore, be on the shelves of the library. By this means a perfect record can be kept of every book belonging to the library, and its whereabouts known; and, if not on the shelves, the length of time it has been out can be readily traced by the librarian, without leaving his desk.

Each division of the book is prepared to last six months, and is indexed, both with initial letters and progressive numbers, so as to facilitate reference. The same book-covers, or cases, will last for a number of years, by fastening the divisions in with removable bands or strings.

I am satisfied that the system of classifying and recording the books taken out or exchanged, is a good one, and is well adapted for either a large or a small library whatever its circulation may be. In December, 1862, I submitted the plan to the consideration of the Mechanics' Institutes, through the pages of the journal of the late Board of Arts and Manufactures for Upper Canada; and have also at different times explained it to the directors of Mechanics' Institutes. The Hamilton Institute adopted it some years ago, and its efficient superintendent, Mr. Rutherford, assures me that he is well satisfied with it. I have only to add, that, while as many as from 600 to 700 members were taking out books from the library of the Toronto Mechanics' Institute, at one time, no inconvenience was experienced in making the necessary entries—familiarity with the system, and ordinary care, being all that is required for its satisfactory working.

ANALYSIS

OF

REPORTS OF MECHANICS' INSTITUTES.

BARRIE MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	100 00	Books purchased in accordance with conditions of Grant	170 00
Donations	100 00	Stationery, Fuel, &c	22 00
Legislative Grant	400 00	Repairs and Furnishing	100 00
Balance due Treasurer	12 00	Lectures	50 00
		Salaries	200 00
		Miscellaneous	70 00
	612 00		612 00

Note.—The Institute comprises 51 members, and a library of 130 vols. Having been but recently organized no evening classes have been formed. Eight lectures on some of the more interesting subjects of science and literature were given during the year. Clear assets, $420.

BERLIN MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	10 50	Books bought in accordance with Grant	161 65
Members' Subscriptions	133 98	Expenses of Classes, ditto	48 00
Fees from Class Pupils	16 83	Books, Binding, &c	74 74
Fees from Lectures, &c	34 39	Appropriation, as under Statute	165 17
Legislative Grant	306 45	Five per cent. on Grant to Mechanics' Institute Association	15 32
		Repairs, Insurance, Fuel, and Miscellaneous	35 99
		Balance in hand	1 31
	502 18		502 18

Note.—The library contains 951 vols.; reading room eight newspapers and two magazines. In book-keeping and penmanship class, 18 pupils: arithmetic and mathematics 22 pupils; the same in English grammar and composition. One lecture and a concert during the year. Clear assets estimated at $1002.

Mr. Pearce, School Inspector, in his report on this Institute, observes:—

"The *Berlin* Institute is, on the whole in a satisfactory condition. The Officers, energetic, enterprising men, find it difficult however, to obtain the support of real mechanics. On account of now being obliged by Statute to spend most of their money for works other than fiction, they, also, find it difficult to keep up the interest in the Institute which was formerly felt. In fact so depraved have the tastes of our people become by reading pernicious, trashy

novels, that a book worth the perusal is scarcely touched. I heartily congratulate our Legislators on the wisdom manifested by them, in prescribing such conditions of aid to Institutes as are set forth in the Statute. I hope it will eventually have the effect of elevating the tone and greatly improving the usefulness of these institutions. I am exceedingly sorry to have to state that the evening-classes were a partial failure last winter, the attendance at last dwindling down so low that they were discontinued long before the time intended. The Directors of this Institute are able to shew that the Legislative Grant of last year, with that raised by them to secure it, has been properly expended (or appropriated to be expended as soon as the books can be obtained) they have, however, no funds left on which they can secure a Grant this year."

BRANTFORD MECHANICS' INSTITUTE.

Receipts.	$	Cts.	Expenditure.	$	cts.
Balance in hand	191	80	Books bought in accordance with conditions of Grant	251	19
Members' Subscriptions	212	25	Books, Magazines, Binding, and Stationery	168	26
Fees from Lectures	55	80	Rent	48	00
Legislative Grant	400	00	Fuel, Repairs, &c.	44	5
Miscellaneous	41	07	Lectures	55	80
			Salaries	75	00
			Five per cent. of Grant to Mechanics' Association	20	00
			Miscellaneous	11	40
			Balance in hand	226	62
	900	92		900	92

Note.—The Institute consists of 132 members, and has a library of 1363 vols. The reading-room is supplied with 15 magazines and reviews. Two lectures or readings were given. Clear assets, estimated, $1556. From a liberal arrangement made with Messrs. Waterous and Co., their apprentices had the advantages of the Institute free, and their other employees for the payment of one dollar each; and a hope is expressed that other firms will follow so excellent an example. The Directors urge the desirableness of having an excursion of the members, and an Industrial and Art Exhibition, as a means of increasing the funds of the institute, and of promoting the improvement and social happiness of its members.

BRIGHTON MECHANICS' INSTITUTE.

Receipts.	$	cts.	Expenditure.	$	cts.
Balance in hand	48	39	Books bought in accordance with conditions of Grant	60	43
Members' Subscriptions	21	50	Books, binding, &c.	20	08
Fees from Readings	95	51	Rent, fuel, &c.	39	35
Legislative Grant	59	00	Readings	25	00
Miscellaneous	4	60	Salaries	36	00
			Miscellaneous	32	25
			Balance in hand	6	89
	220	00		220	00

Note.—Twenty-two members admitted. Library, 565 vols. Readings and musical entertainments, 10. Reading room supplied with 11 newspapers, 6 magazines, and 3 re-

views. Clear assets, estimated, $456. The Inspector, Mr. Scarlett, reports: - "I find the Institute in this place in efficient and working order, and in accordance with the appended report."

CLINTON MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	77 86	Books purchased in accordance with conditions of Grant	115 79
Members' Subscriptions	122 15	Evening classes	161 40
Fees from Pupils	97 40	Books, Magazines, Binding, &c.	129 39
Fees from Lectures	49 14	Lectures	64 46
Legislative Grant	122 58	Salaries	9 75
Clinton Grant	25 00	Miscellaneous	10 83
		Balance in hand	2 51
	494 13		494 13

Note.—The Institute comprises 113 members, and the library 749 vols In the evening classes there have been 16 pupils in book-keeping and penmanship; 27 in arithmetic and mathematics; 18 in drawing, and three in chemistry and natural philosophy. Also, one lecture and two readings. Clear assets, $878.

Report.

The Directors have to report that the condition and progress of the Institute during the past year have been highly satisfactory. By the liberality of the Village Council, fairly representing, as we believe, the sentiments of the ratepayers towards the Institute, a suitable and convenient room in the Town Hall has been granted to us, free of rent. In response to this liberality, the annual subscription fee to the Institute has been reduced to one dollar, for which small sum any person can now have the privilege of taking out books and periodicals from a well selected library, comprising nearly eight hundred volumes, with a monthly supply of the best English and American magazines. At the same time the village was canvassed for subscribers, and the result has been a considerable accession to our subscription list. The number of subscribers is now one hundred and thirteen, against sixty-one last year. The number of books and periodicals taken out has been 1651 against 983 last year. The number of books in the library is now 749 against 655; and a considerable addition will soon be made of works which have been ordered and paid for, but are not yet received.

The evening classes, which the Directors have heretofore had in view, have been commenced this year with a success exceeding what was anticipated. Owing to various obstacles, a beginning could not be made until the first week in March. We had then the good fortune to secure the services as instructors of Mr. James Scott and Miss Clara Mountcastle both of whom are well known as teachers of special ability in their respective departments. Classes in arithmetic, book keeping, geometry, and drawing were formed, comprising altogether forty-five pupils. The attendance during the quarter has been generally good, and the students have been for the most part earnest and assiduous. Several of them have attained marked proficiency The result has been so satisfactory that we are warranted in expecting that the classes will be resumed in the autumn, with equal if not with increased numbers. In the organization of these classes particular interest has been taken by Mr. Curtis Stevenson, whose efforts have mainly contributed to their success, and deserve our special acknowledgement.

Owing to the want of a public hall during the greater part of the winter season, we were unable to hold our usual reunions. A lecture on elocution with illustrative readings by Mr. Richard Lewis, and two evenings of Shakspearian and miscellaneous readings by Professor A. M. Bell, were respectably attended, and afforded great satisfaction; but being given at a late period of the spring the audiences were not as large or the returns as good as they would have been at a more favourable season.

The Directors have been desirous of opening a reading-room in connection with the Institute, but the present income of the Society is not sufficient for this purpose, or for other improvements which would add much to the usefulness of the institution. Under the existing law, the Government Grant is required to be expended for two special purposes, viz :— for evening classes and for the purchase of books of a scientific character. As Mechanics' Institutes are now a part of the educational system of the country, and are under the supervision of the County School Inspectors, it would seem to be but proper that the local councils should be required by law, as in the case of High Schools, to supplement the funds of the Institutes by the grant of a sum equal to at least half the amount granted by the Government. As the funds of the Institutes are expended under Government Inspection, no chance for misuse of these funds could arise; and the great public benefits accruing from good libraries, evening classes, reading-room and annual courses of lectures, in every town and village in the Province, would be obtained, at a very small expense to each locality. Under this arrangement, combined with the excellent Public School System of the Province, and with the information diffused by our many Agricultural Societies, the people of Ontario would fairly be entitled to rank with the best instructed communities in the world.

* * * *

COLLINGWOOD MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	98 00	Balance due Treasurer	19 50
Fees from Lectures	65 75	Books bought in accordance with conditions of Grant	283 42
Donations	200 00	Books, stationery, &c	40 24
Legislative Grant	400 00	Furnishing, Fuel, &c	56 33
Miscellaneous	4 77	Lectures	52 75
Balance due Treasurer	18 85	Salaries	271 93
		Instruments	19 25
		Rent	40 00
		Miscellaneous	3 95
	787 37		787 37

Note.—This Institute has 126 members, and a library of 696 vols.; reading-room 43 newspapers; 10 magazines; and 4 reviews. Two lectures given during the year. Clear assets $876. The Directors report that the Institute is steadily doing a good work, but regret that the mechanics and other do not so fully avail themselves of its advantages as might reasonably be expected.

COLUMBUS MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	104 00	Books for library	108 14
Fees from Readings	21 95	Salaries	15 00
Donations	5 00	Miscellaneous	6 95
		Balance in hand	86
	130 95		130 95

Note.—This Institute has 104 members, and a library of 164 vols. It held four meetings for readings, music, &c., but having been but recently formed, the Directors had not had an opportunity of establishing evening classes, which they hope to do shortly. Assets $151.

DUNDAS MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	316 82	Books bought in accordance with conditions of Grant	214 40
Members' Subscriptions	92 79	Periodicals, Stationery, &c.	102 00
Proceeds of Concert	149 32	Rent	100 00
Rent of Rooms	50 00	Furnishing, Fuel, Insurance, &c.	46 74
Sale of Magazines	13 38	Concert	65 25
Legislative Grant	400 00	Salaries	50 00
		Balance in hand	444 94
	1023 33		1023 33

Note.—The Institute had 131 members, and 1700 vols. in its library. Held one concert. Clear assets, $2,467.

ELORA MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	181 00	Books bought in accordance with conditions of Grant	580 00
Fees from Pupils	15 45	Evening Classes	31 25
Fees from Lectures	48 29	Binding, Stationery, &c.	10 21
Donations	50 00	Lectures, &c.	24 50
Legislative Grant	400 00	Salaries	25 00
Miscellaneous	3 00	5 per cent. of Grant to Mechanics' Association	20 00
		Fuel, Light, &c.	6 09
		Balance in hand	0 69
	697 74		697 74

Note.—The Institute has 202 members, and a library of 530 vols. Pupils in the following classes:—book-keeping and penmanship, 23; English grammar and composition, 15; arithmetic and mathematics, 11. Lectures on various subjects, 6. Estimated assets (clear), $584.

GALT MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	65 22	Books bought in accordance with conditions of Grant	357 98
Members' Subscriptions	241 70	Evening Classes	53 46
Fees from Pupils	47 00	Books, Periodicals, and Binding	124 32
" Lectures	16 65	Fuel, Insurance, &c.	38 76
" Exhibition	646 00	Exhibition	250 00
Donations	16 91	Salaries	130 00
Legislative Grant	400 00	Balance in hand	457 04
Miscellaneous	14 08		
	1441 56		141 56

NOTE.—Number of members, 151; books in library, 1527. Reading room supplied with 19 newspapers, 13 magazines, and 4 reviews. An Art Exhibition was held, and one lecture was given. 37 pupils in book-keeping, arithmetic, mathematics, ornamental and mechanical drawing. Net assets, estimated, $2,457.

The Directors report that though the Institute has been doing a good work for several years, yet it has not received that amount of public support which its capability of usefulness requires. The library contains many valuable works of reference, and the reading-room pretty well frequented. The Inspector (Mr. Muir) remarks;—"It is matter of regret that in a manufacturing town like Galt, the mechanics do not avail themselves more of the opportunities and facilities afforded them of mental improvement by the Mechanics' Institute. Those in charge of the Institute have endeavoured to make it as attractive and instructive as possible, with a view of extending its influence over the mechanics in Galt. We must have our artizans to take more interest in the Institute, as it is especially for them that it exists."

GREENWOOD MECHANICS' INSTITUTE.

RECEIPTS.	$ cts.	EXPENDITURE.	$ cts.
Members' Subscriptions	48 00	Books bought in accordance with conditions of Grant	120 04
Donations	8 00	Binding and Stationery	6 00
Legislative Grant	112 00	Balance in hand	41 96
	168 00		168 00

NOTE.—This Institute has 48 members, and 202 vols. in its library. Assets (clear). $234.

GRIMSBY MECHANICS' INSTITUTE.

RECEIPTS.	$ cts.	DISBURSEMENTS.	$ cts.
Members' Subscriptions	85 00	Books bought in accordance with conditions of Grant	580 00
Donations	161 00	Books, Binding, and Stationery	57 03
Fees for Lectures	66 65	Furnishing	11 75
Legislative Grant	400 00	Lectures	24 50
Miscellaneous	1 27	5 per cent. of Grant to Mechanics' Association	20 00
Balance due Treasurer	2 25	Salaries	16 00
		Miscellaneous	6 29
	715 57		715 57

NOTE.—The Institute consists of 85 members, and has a library of 465 vols., and a reading-room supplied with 9 magazines. It had 5 Lectures and Readings. Assets, $650.

HAMILTON MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	791 73	Books bought in accordance with conditions of Grant	642 39
Members' Subscriptions	1286 80	Books otherwise bought	131 67
Fees from Lectures	132 15	Newspapers, Magazines, &c.	443 17
Rent of Hall	2487 00	Binding, Stationery, &c.	103 87
Rent of Stores	505 00	Repairs, Fuel, Light, & Insurance	962 77
Sale of Newspapers	99 76	Lectures and Readings	99 38
Interest	39 66	Salaries	890 29
Legislative Grant	400 00	Mortgage	1419 55
Miscellaneous	43 02	Miscellaneous	253 60
		Balance in hand	838 43
	5785 12		5785 12

NOTE.—This Institute had 590 members, and 3,442 vols. in its library. Reading-room supplied with 76 newspapers, 23 magazines, and 4 reviews. Five Lectures and Readings had been given. Assets, $24,838.

EXTRACTS FROM REPORT.

"The Directors have great pleasure in drawing attention to the fact, that the large amount of arrears, which have been owing to the Canada Life Association for the past eight years, and which to a certain extent has retarded its usefulness, have now, through the exertions of your Board, been entirely paid off, and, so far as that Company is concerned, they commence with a clean sheet, that is with the payment of $200 quarterly.

"During the year your Board made an appropriation of $200 for the purchase of standard works, in order to supplement the Government Grant of $400 for the same purpose, more than both of which sums have been expended in the purchase of the best works of the day—in all, the sum of $774 has been expended, whereby 561 volumes have been added to the library. The library presents one great drawback—the room being too small for the requirements of the Institute. The books just now are piled from floor to ceiling, and notwithstanding this drawback, that the improvements in the library are appreciated by the reading public is proved not only by the increased membership but by the increased number of books taken out during the year. They are also pleased to draw attention to an increased demand for a higher class literature. Works on natural, moral, and intellectual philosophy, mechanics, architecture and the fine arts are daily sought after and read. The works of such authors as Froude, Lubbock, Buckle, Taine, Timbs, Tyndall, Hamilton, Mill, Spencer, Huxley, Darwin, Ruskin and Hamerton are now as much sought after as were formerly the works of Dickens, Thackeray, James, Bulwer and Miss Braddon—and this taste it is the intention of your Board to foster and encourage to the best of their ability.

"It is to be hoped that the success of the Institute will be such as to cause further efforts to be made in this direction, and there is no doubt that the support of the public can be confidently counted upon in every endeavour to increase the usefulness of an institution so valuable as the library has now become.

"During the year your Directors have had under their careful consideration, and have procured plans for the enlargement and improvement of the library, and by building an addition to the west end of the Institute will not only give a better ventilated and better lighted, but a more comfortable and entirely new reading room, removed from the disturbance caused by the noise which frequently accompanies the occupation of the Hall above the present reading room. They trust that the liberality of the citizens, the interest of the reading public, and the energy of the incoming Board will enable them to carry out these

designs to a successful issue, and then Hamilton the ambitious will not only have the most prosperous but the most comfortable and complete Mechanics' Institute in the Dominion of Canada."

HESPELER MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	147 58	Books bought in accordance with conditions of Grant	490 63
Proceeds of Lectures	75 23	Classes	26 00
Donations	142 49	Books and Periodicals	48 78
Legislative Grant	400 00	Stationary, Postage, &c	12 95
Miscellaneous	4 50	Furnishing, Fuel, &c	53 47
		Salaries	5 78
		Miscellaneous	22 05
		Balance in hand	110 14
	769 80		769 80

Note.—Number of members, 68; books in library, 590 vols.; reading-room supplied with 12 newspapers and 4 magazines. Mutual instruction class, 14 pupils. During the year one lecture, and a picnic and concert. Assets, $700. The Inspector, Mr. Pearce, remarks:—

"The Hespeler Institute, recently organised, is, I am happy to report, a *Mechanics'* Institute in every sense of the term, officers, members, and nearly all connected with it are *real mechanics*. It is very gratifying to find here and there through the Province an institute doing its legitimate work,—the diffusion of knowledge among *bona fide* mechanics and managed by themselves as is the case in Hespeler. Such should receive all the assistance that can possibly be extended to them. In giving evening class instruction much more is expected to be done during the approaching winter than was done last."

KINCARDINE MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	3 12	Books bought in accordance with conditions of Grant	95 25
Members' Subscriptions	38 50	Classes	10 00
Fees from Readings	128 40	Books, Stationery, &c.	15 00
Rent of Room	4 50	Readings	22 00
Legislation Grant	170 00	Proceeds of Concert given to the Poor	62 75
		Miscellaneous	50 02
		Balance in hand	89 49
	344 52		344 52

Note.—This Institute has 38 members, and 290 vols. in library; and 16 pupils in the class' for book-keeping and penmanship. It has held eight readings and musical entertainments. Assets, $522.

LONDON MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	5 34	Books bought in accordance with conditions of Grant	112 99
Members' Subscriptions	736 04	Classes	100 00
Proceeds of Lectures	54 00	Books, Magazines, &c	127 79
Legislative Grant	400 00	Repairs, Fuel, Insurance, &c	488 70
		Salaries	100 00
		Miscellaneous	34 61
		Balance in hand	31 29
	995 38		995 38

Note.—This Institute has 464 members; and 1116 vols. in its library; and 19 newspapers, 2 magazines, and 3 reviews in reading-room. It also possesses a classified museum of Natural History, to which additions are made from time to time. In the classes 72 pupils in book-keeping and penmanship; 30, architectural and mechanical drawing; 29, ornamental drawing; 13, chemistry and natural philosophy; 65, elocution; 55, music; and 25 in mutual instruction. Lectures and entertainments: chemistry, 2; elocution, 15; music, 41. Clear Assets, $4,408.

NIAGARA MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	21 07	Books bought in accordance with conditions of Statute	460 63
Members' Subscriptions	140 73	Books and periodicals	69 04
Fees from Lectures	226 17	Binding, Stationery, &c	46 95
Legislative Grant	400 00	Lectures	153 49
Miscellaneous	15 30	Salaries	45 32
		Miscellaneous	27 84
	803 27		803 27

Note.—Members, 63; 1214 vols in library, and 3 newspapers and 11 magazines and reviews in reading-room. One excursion and 6 lectures during the year. Assets, $1108.

NORWOOD MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	47 00	Books bought in accordance with conditions of Grant	116 61
Proceeds of Readings	78 17	Periodicals, &c	6 12
Donations	20 00	Readings	15 27
		Miscellaneous	2 63
		Balance in hand	4 54
	145 17		145 17

Note.—This Institute having been recently formed was not qualified to receive any Grant last year. It consists of 47 members, and has a library of 114 vols.; and had six meetings, or readings, recitations and music. Assets, $115.

PARIS MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	21 40	Books bought in accordance with conditions of Grant	95 83
Members' Subscriptions	157 50	Magazines, Stationery, &c	100 09
Donations	110 00	Fuel, Furnishing, Insurance, &c	70 05
Proceeds of periodicals	29 77	Salaries	52 00
Legislative Grant	200 00	Balance in hand	200 70
	518 67		518 67

Note.—Number of members, 108; and 1311 vols. in library; 10 newspapers and 15 magazines and reviews in reading room. Assets $2,430. A subsequent report shows that the amount of Grant, and that of the affidavit, have been expended in the purchase of books for the library, as prescribed by Statute.

PETERBORO' MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	4 27	Books bought in accordance with conditions of Grant	604 25
Members' Subscriptions	233 75	Books, Periodicals, Stationery &c	98 34
Proceeds of Lectures	31 20	Fuel, Light, Furnishing, and Insurance	108 93
Donations	123 68	Rent	50 00
Town Council Grant	100 00	Lectures	31 10
Legislative Grant	400 00	Salaries	31 50
Miscellaneous	93 25	Miscellaneous	28 06
		Balance in hand	33 97
	986 15		986 15

Note.—This Institute has 186 members, and a library of 1,072 vols. Reading-room supplied with 15 newspapers, and 27 magazines and reviews. Two lectures were given. Assets, $1,834.

PORT ELGIN MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	5 29	Books bought in accordance with conditions of Grant	109 10
Members' Subscriptions	79 10	Magazines, &c	30 08
Proceeds of Periodicals	24 72	Rent	28 00
Legislative Grant	131 70	Salaries	15 85
Miscellaneous	8 25	Miscellaneous	28 94
		Balance in hand	37 09
	249 06		249 06

Note.—Members, 115; library 493 vols.; reading-room, 3 newspapers and 7 magazines and reviews. One lecture was given. Assets, $325.

PRESTON MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Members' Subscriptions	176 00	Books bought in accordance with conditions of Grant	794 17
Fees from Pupils	10 00	Evening Classes	14 60
" Lectures	17 50	Books, Magazines, Binding, &c.	216 46
Donations	168 00	5 per cent. on Grant to Association.	20 00
Legislative Grant	400 00	Salaries	50 00
Miscellaneous	2 50	Repairs, Fuel, Light, &c.	72 64
Balance due Treasurer	393 87		
	1167 87		1167 87

Note.—This Institute consists of 113 members, and contains a library of 568 vols., 263 of which relate to science and art. It had 20 pupils in class for penmanship and book-keeping, and the same number for arithmetic and mathematics. Two lectures had been given. Clear assets estimated at $623.

The School Inspector, Mr. Thos. Pearce, remarks in his Report on this Institution as follows:—

"The Preston Institute recently established is, I believe, doing a noble work. The books on the shelves have been well and carefully selected; not more than 5 per cent. of the whole library consists of works of fiction. There was not much done last winter in the matter of evening class instruction. During the ensuing season, however, the Directors anticipate large classes. Their financial report shows that they are entitled to the full amount of the Legislative Grant for the current year."

RICHMOND HILL MECHANICS' INSTITUTE.

Receipts.	$ cts.	Disbursements.	$ cts.
Members' Subscriptions	78 00	Balance due Treasurer	6 35
Fees from Readings, &c.	82 35	Books bought in accordance with conditions of Grant	66 50
Rent of Piano	12 00	Books, Magazines, &c.	36 76
Legislative Grant	70 00	Repairs, Fuel, and Insurance	28 00
Miscellaneous	33 58	Readings	70 85
		Miscellaneous	61 35
		Balance in hand	6 12
	275 93		275 93

Note.—This Institute has 78 members, 187 vols. in its Library, and 12 magazines and reviews in reading-room. It held 12 meetings for debates, reunions, &c. Assets, $407.

SEAFORTH MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	6 45	Evening Classes	6 25
Members' Subscriptions	30 50	Stationery, &c.	3 88
Fees from Pupils	3 75	Salaries, &c.	22 00
Donations	50 00	Balance in hand (including Grant appropriated, but not expended)	158 57
Legislative Grant	100 00		
	190 70		190 70

This Institute has 48 members, and a library of 452 vols. There were 5 pupils in each of the following classes:—book-keeping and penmanship, arithmetic and mathematics, English grammar and composition. Assets, $600.

SMITH'S FALLS MECHANICS' INSTITUTE.

Receipts.	$ cts	Expenditure.	$ cts.
Balance in hand	90 54	Books bought in accordance with conditions of Grant	160 00
Members' Subscriptions	54 00	Magazines	2 00
Legislative Grant	142 50	Salaries	25 00
		Balance in hand	100 04
	287 04		287 04

Note.—The Institute has 54 members, and 1,656 vols. in the Library. Assets $2,160.

STRATFORD MECHANICS' INSTITUTE.

Receipts.	$ cts,	Expenditure.	$ cts.
Members' Subscriptions	146 50	Books bought in accordance with conditions of Grant	72 28
Legislaitve Grant	237 50	Books, Periodicals, &c.	169 54
Miscellaneous	40	Fuel, repairs and insurance	31 58
		Salaries	66 00
		Miscellaneous	2 80
		Balance in hand	42 20
	384 40		384 40

Note.—Members, 126 ; vols in library, 1357. Assets $1 242. The Directors report that the Institute is progressing, and that the Town Council had set apart a room in the Town Hall for the use of the members ;—an arrangement that has already had a beneficial influence on the working of the Institution, particularly the library.

ST. CATHARINES' MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	9 23	Books bought in accordance with conditions of Grant	481 00
Members' Subscriptions	261 50	Books, Periodicals, &c.	63 26
Proceeds of Readings	61 38	Repairs, Fuel, &c.	140 25
Legislative Grant	400 00	Salaries	27 50
		Mechanics' Institute Association	20 10
	732 11		732 11

Note.—Members, 181 ;—vols in library, 1516. Reading-room, 7 magazines; 2 readings, and 2 reunions. Assets $3,284.

ST. MARY'S MECHANICS' INSTITUTE.

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	3 15	Furnishing, &c	3 60
Members' Subscriptions	146 00	Salaries	40 00
Proceeds of Lecture	14 75	Balance in hand	262 63
Donations	33 33		
Legislative Grant	109 00		
	306 23		306 23

Note.—This Institute comprises 90 members, and a Library of 629 vols. Only one lecture had been given. Assets $812. At the end of the financial year, Nov. 30th 1871, none of the Grant had been expended. A number of valuable works had been ordered, and which were subsequently received, making a large and desirable addition to the library.

THOROLD MECHANICS' INSTITUTE,

Receipts.	$ cts.	Expenditure.	$ cts.
Balance in hand	131 32	Books bought in accordance with conditions of Statute	397 69
Members' Subscriptions	121 00	Books, Periodicals, &c.	72 63
Proceeds, Lectures and Entertainments	231 49	Fuel, Furnishing and Insurance	63 85
Legislative Grant	400 00	Lectures, &c.	126 05
Miscellaneous	45 71	Rent	16 50
		Scientific Apparatus	03 33
		Miscellaneous	50 14
		Balance in hand	99 53
	929 52		929 52

Note.—This Institute has 121 members, and 1250 vols. in the library. Class for mutual instruction, 80 pupils. Lectures, readings and entertainments, 15. Assets $1800.

TORONTO MECHANICS' INSTITUTE.

Receipts.	$ cts	Expenditure.	$ cts.
Balance in hand	63 52	Balance due to Treasurer	136 79
Members' Subscriptions	1442 15	Books bought in accordance with conditions of Grant	219 46
Fees from Pupils	492 12	Evening Classes	556 93
Fees from Lectures	82 31	Books, Periodicals, and Newspapers	1287 65
Donations	100 00	Binding, Stationery, &c.	669 37
Rent of Rooms	2258 29	Fuel, Light, Repairs, and Insurance	1463 43
Legislative Grant	400 00	Salaries	1384 32
Old Stores, &c.	523 25	Mortgage	23400 00
Sale of Building	36500 00	Interest	1898 45
Miscellaneous	161 23	Miscellaneous	118 48
		Balance in hand	10887 99
	42022 87		42022 87

NOTE.—The Institute consists of 761 members and subscribers, and the library contains 7152 vols. Reading-room supplied with 89 newspapers, 28 magazines, and 7 reviews. Pupils in evening-classes: book-keeping and penmanship, 67; arithmetic and mathematics, 44; architectural and mechanical drawing, 42; ornamental drawing, 21; English grammar and composition, 19. During the term ending Dec. 31, 1871: French, 30; elocution, 17. Six readings during the year. Clear assets, estimated, $2038.

WOODSTOCK MECHANICS' INSTITUTE.

RECEIPTS.	$ cts.	EXPENDITURE.	$ cts.
Balance in hand	95 40	Books bought in accordance with conditions of Grant	450 00
Members' Subscriptions	206 00	Books, Periodicals, &c.	53 01
Donations	79 60	Fuel, Insurance, &c.	19 39
Legislative Grant	380 00	Salaries, &c.	248 00
Miscellaneous	9 40		
	770 40		770 40

NOTE.—Members, 206; books in library, 1,466 vols. Reading-room supplied with 12 newspapers, 6 magazines, and 4 reviews. Assets, $1450.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (D).

REPORT OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO FOR 1872.

To the Honourable the Commissioner of Agriculture :—

SIR,—It is with much pleasure that I submit for your inspection the Report of the Fruit Growers' Association of Ontario for the year 1872. Since the presentation of our last Report the membership of the Association has largely increased, having more than doubled in number, and these so widely scattered over the Province that nearly every section is now represented. The Directors, believing that it would very materially promote the objects which this Association is intended to advance, if the members were put in possession of a complete list of the names and post-office address of their several co-labourers, have instructed me to embody in this Report such a list, so arranged under the head of the several counties and cities as to enable them readily to ascertain who among their neighbours are members of the Association. The Report also contains the usual record of the discussions which took place at the February, July and October meetings, which contain much valuable information—the annual address of the President, which will prove of very great value to every one interested in the growing of pears, &c., and such other papers of interest as the Directors have been able to procure. A beautifully executed lithograph of the Bonne Chairgeau Pear, accurately coloured by hand, has been secured to accompany each number of the Report, designed for the members of the Association. It is the intention to continue to illustrate the Annual Report in this manner, if the means of the Association will admit, in the hope of ultimately furnishing the members with accurate coloured representations of our most valued fruits.

I have the honour to remain,
Your obedient servant.

D. W. BEADLE,
Secretary of the Fruit Growers' Association.

ST. CATHARINES, Nov. 1st., 1872.

PROCEEDINGS AT THE ANNUAL MEETING.

The annual meeting was held in the Court House, Hamilton, on Tuesday evening, September 24th, 1872.

The meeting was called to order by the President.

The Secretary read the Directors' report, which was received and adopted.

The Treasurer submitted his report, together with the certificate of the Auditors.

The President read his annual address, which was received with marked attention and interest. On motion of Mr. Ross, of Goderich, seconded by Mr. Saunders, of London, the thanks of the meeting were tendered to the President, and he was requested to furnish a copy for the committee on publication.

The election of officers for the current year was then held, with the following result: —

President—Rev. R. Burnet, Hamilton.

Vice-President—Wm. Saunders, London.

Secretary-Treasurer—D. W. Beadle, St. Catharines.

Directors—Messrs. J. C. Rykert, St. Catharines; John Gray, sen., and George Leslie, jun., Toronto; W. F. Clarke, Guelph; J. A. Allen, Kingston; A. B. Bennett, Brantford; A. M. Ross, Goderich; C. Arnold, Paris; and W. Holton, Hamilton.

Auditors— Messrs. W. L. Copeland, and W. J. McCalla, St. Catharines.

Some discussion having arisen with regard to the number of Directors, and the importance of having all parts of the Province represented in the Council of the Association, it was on motion,

Resolved, that the President and Secretary, together with Messrs. Rykert, of St. Catharines; Allen, of Kingston; and Gibbons, of Goderich; be a committee to revise the Act of Incorporation of this Association, and take such action in relation to the alteration of the same by the Legislative Assembly as they may deem to be advisable.

Some seedling fruits were laid on the table by Messrs. Morse, Moyle, Arnold, and Cowherd, which were duly referred to the committee on seedling fruits.

Mr. Roy, of Owen Sound, having brought to the meeting some fine samples of Grapes, grown at that place in the open air, the thanks of the Association were voted to Mr. Roy, for taking the pains to bring to this meeting these interesting specimens of the fruits of the Georgian Bay, and in this way helping to diffuse a knowledge of the fruit capabilities of that part of the Province.

On motion, adjourned.

Directors' Report,

Read at the Annual Meeting.

In closing another year, the Directors take great pleasure in announcing the continued increase in the membership of our Association, and the consequent enlargement of its field of operations, and greater usefulness. Our membership is now very nearly two thousand, scattered over all parts of Ontario, and a few residing in the sister Provinces. It has been our intention, as soon as practicable, to publish a new copy of the Constitution and By-laws, with a complete list of membership, for distribution among our members, so that we may all know who they are and where they reside.

Three meetings for discussion of subjects affecting the growing of fruit have been appointed, the first was held at Hamilton, in January; the second at Guelph, in July; and the third to be held in the Board Room, Agricultural Hall, Toronto, on the 8th day of October. A very decided benefit accrues to the Association, and extension of its usefulness, by holding these meetings for discussion at different places in the Province, and we trust that in the future pains will be taken to scatter them yet more widely than has hitherto been done.

The system of distributing fruit-bearing trees and plants among the members, so auspiciously begun by our predecessors, has been continued during the past year, and trees of the Wagener Apple, Beurré Clairgeau Pear, McLaughlin Plum, Hales Early Peach, and Othello Grape, were very widely scattered in various parts of the land last spring. Believing that this

method of making the whole Province a great experimental fruit garden to be fraught with the happiest results both to our society and to our country, we have made engagements to have grown a quantity of the Goodale Pear sufficient to supply all of our members with a tree; have engaged two thousand trees of Clapp's Favourite Pear, for distribution next spring, and have advertised for plants of the Downing Gooseberry, to be furnished in the spring of 1874, and trees of the Swayzie Pomme Gris, for spring of 1875, and of the Tetofsky Apple for spring of 1876, with a view to their distribution to the members of the Association. It was the intention of your Directors to have coupled the Norton's Melon Apple tree with the Clapp's Favourite Pear for distribution next spring, but we have been wholly unable to find them in sufficient quantity.

We have followed the course pursued by the board last year, in appointing committees to make a personal inspection of parts of the Province, with a view to ascertain their present fruit productions and their fruit producing capabilities. We appointed committees to examine the country along the Lake Erie shore of Kent and Essex; also, in the County of Huron, and in the vicinity of Toronto, within a radius of fifteeen miles, and in the County of Frontenac, about Kingston; and hope that the reports of the committees entrusted with this labour, —which is on their part a labour of love, being without compensation—will be full of much very valuable information.

The prizes offered during the year 1872 will be found upon the 3rd page of the report for 1871. We are sorry to be obliged to say, that no essays have been received bythe Secretary in competition for the prizes offered therefor. The committee on seedling fruits have several promising varieties under examination and trial, prominent among these are Mr. Dougall's Cherry, and the Elliott Pear, and we hope that among them some will be found worthy to receive the very liberal prizes offered for Canadian seedlings.

The Report for 1871 was handsomely embellished with a very accurate coloured lithograph of the Red Astracan Apple, which not only added much to the appearance, but also to the usefulness of the Report, by placing before the members a truthful representation of one of our most hardy and most useful fruits. Believing that this feature of our Report should be continued, we have engaged the same artist to prepare two thousand copies of a coloured lithograph of the Beurre Clairgeau Pear, with which to illustrate the Report of 1872.

It seems also very desirable that this Association should possess a few acres of ground upon which fruit-bearing trees and plants, whether of Canadian or foreign origin, may be tested sufficiently to enable the Directors to decide whether they or any of them are of sufficient value to be grown and disseminated for trial throughout the Province. We believe that such an initiative experimental ground is essential to the best accomplishment of the great objects of the Association, and that it should be procured and placed under the supervision of some competent person, amenable to the Directors, at the earliest practicable moment.

In order to accomplish all these ends, it will be necessary to procure an increased Government Grant. The sum of five hundred dollars per annum, now received, is barely sufficient to enable us to accomplish but a small part of the good that this Association is capable of doing in the way of helping our people to those varieties of fruit, and informing them in regard to the methods of cultivation, best suited to our peculiar climate and position. This Association is Provincial, and is supplementing for the whole Province the work of our noble Provincial Agricultural Association, in increasing and improving the products of Canadian industry, and there is no reason why it should not receive from the public funds assistance proportioned to the magnitude of its undertakings. Viewing the matter in this light, the Directors have already authorized the President and Secretary to represent the work of this Association to the Honourable the Commissioner of Agriculture, and to request that he may consider whether the interests of the country would not be largely promoted by giving to this Association, and to our sister Society, the Entomological Association, increased facilities for the prosecution of our work.

Another matter that will claim attention from this Association is the establishment of some standard for the judging of fruits and deciding upon their respective merits. Were some standard of comparison once fixed by this Association that should commend itself to the lovers of fruit, much of the uncertainty that now exists would be removed. Such is our climate and peculiar geographical and geological position, that we need a standard of excellence for ourselves, by which we may measure the quality of our apples, pears, plums, cherries, &c In the matter of pears for instance: the Flemish Beauty comes the nearest

to perfection, for us, of any variety with which we are acquainted. In size, beauty, flavour and texture of fruit, and in health, vigour, productiveness and hardihood of tree, it is pre-eminently the Canadians' pear. But we do not propose here to discuss this subject, only to commend it to the attention of the members of our Society, and especially of the incoming Board of Directors.

We have also applied of our funds the sum of fifty dollars as a grant to the Entomological Society, in aid of their library. This we have done because we have felt that the labours of this society, as embodied in their reports, which have been appended to our own and distributed to all the members of our Society, are largely for the benefit of ourselves, and that some acknowledgement on our part of the services rendered by that Society, in the interests of fruit growers, was both due to them and just in us. Besides, we remember that whatever should increase the facilities of our sister society for the prosecution of her peculiar work, would only enable her the more efficiently to serve the interests of our own, and that such an expression of the appreciation in which we held her services would serve to strengthen the mutual good-will and esteem that has always subsisted between us.

It will be seen by our Treasurer's Report, that we have fully used all the funds which have been placed under our control during our term of office. We trust that the manner in which they have been expended will meet with your approbation. By far the largest item of expense is that connected with the distribution of trees. We look forward to such an increase in our membership as will eventually lesson the proportionate cost of this branch of our expenditure, while, at the same time, the aggregate amount shall be largely increased. During the past season we distributed to the members, 542 apple trees, 348 peach, 1115 pear, 819 plum, 600 grape-vines and 31 raspberry and blackberry plants. In addition, our members have received a valuable report, embodying information worth many times the amount of their annual fee; a report that is sought after by kindred societies abroad, and from which liberal extracts are made by the leading horticultural periodicals of Great Britain. And we believe that when the cost of carrying on the operations of this Association is compared with the amount expended for the direct benefit of its members, it will be seen that your Directors have not been wanting in their regard for the most economical discharge of the trust committed to them.

The plan, adopted by our predecessors and continued by us, of rewarding those members who, at some cost of time and inconvenience to themselves, have taken pains to represent to their neighbours the operations of our Society and the benefits to be derived from joining it, has been found to work well. We would suggest that some special award might be made to those who added fifteen or twenty new members to the Association in one season, believing that such would be a step in the right direction. We have also had inquiry from some, if they might be allowed to take instead of the extra fruit trees offered for new members, some ornamental plants, shrubs or trees to the same value. Upon this we have not acted, confining ourselves strictly to the distribution of fruit trees, but we commend this inquiry to the consideration of members, knowing that our successors will desire to carry out the wishes of the Association.

Rejoicing in what has been done in the interests of fruit growing, and yet more at the prospects of usefulness opening before us, we lay our Report before the Association, and return to you the trust which, during the past year, has been committed to our hands.

All of which is respectfully submitted.

ROBERT BURNET.
President.

TREASURER'S REPORT.

To the President and Directors of the Fruit Growers' Association of Ontario:

GENTLEMEN—At the close of the last fiscal year there was a balance in the Treasury of..... $474 95
(See Report of Auditors, dated 2nd January, 1872.)
Since that time I have received from Members' fees..... 1532 00
From the Government Grant..... 500 00
From the Special Deposit withdrawn from Bank..... 405 47

Making a total of..... $3012 42

I have expended under your direction the following sums, namely:—

For Prizes	$60 50
Expenses of Committees and Directors	138 80
Stationery and Printing	151 12
Electrotypes and Coloured Lithographs	263 09
Postages and Telegrams	142 40
Advertizing	110 00
Express Charges and Freight	188 30
Copyist	96 00
Grant to Entomological Society	50 00
Sundries	4 15
Merrell and Coleman, for Vines	16 54
Nicholas and Newson, for Trees	45 60
W. S. Little do.	65 35
Ellwanger and Barry do.	77 25
C. L. Hoag and Co., for Vines	16 72
George Campbell do.	23 50
Charles Arnold do.	227 00
Smith, Clark and Powell, for Trees	298 25
Graves, Selover, Willard and Co., do.	420 40
G. T. Fish	77 50
Beadle and Buchanan, Trees and Labour	224 49
Making a Total of	$2696 96
Which leaves after deducting the Secretary–Treasurer's Salary	200 00
Making the total disbursements	2896 96
A balance in my hands of only	115 46

I have already contracted for two thousand copies of a coloured lithograph plate of the Beurre Clairgeau Pear for the embellishment of our next Report, according to your instructions, at a cost of something over $300, including freight and duties. There are but few outstanding accounts; something is probably due to the Chairmen of some of the Committees, principally of those charged with the duty of making a personal examination of various sections of the Province, but the entire indebtedness on this account will probably not exceed fifty Dollars.

All of which is respectfully submitted.

D. W. Beadle,
Secretary–Treasurer.

Auditor's Report.

Abstract of Treasurer's Account for the year ending 26th September, 1871.

Receipts.

1870, Oct. 4	To Cash on hand this date, as per audit	$277 23
	To Cash refunded by Customs	12 50
1871, Sept. 5	To Government Grant	500 00
	To Members' Fees from Oct. 4, 1870, to Sept. 26, 1871	762 00
		$1551 73
1871, Sept. 26	To Balance Cash on hand	$474 95
	Also at Credit of Association in N. D. Bank, including Interest made up to 30th June, 1871, as per Voucher	389 89

EXPENDITURE.

1870, Oct. 25	By	"Globe," for Printing		$1 00
	"	Grant to Entomological Society		50 00
26	"	Amount paid A. Morse's account for Expenses		4 00
Dec. 13	"	" A. Slaight's " do.		8 00
	"	" A. B. Bennett's " do.		17 15
	"	" W. H. Mills's " do.		4 30
16	"	" W. H. Boulton's " do.		2 50
31	"	" W. L. Copeland & Co's. for Stationery		8 75
1871, Jan. 21	"	" A. S. St. John's for Writing		2 00
Feb. 7	"	" G. Leslie's for Expenses		8 50
13	"	" S. L. Goodale's for Scions		27 40
	"	" Duties and Express Charges on same		1 90
27	"	" W. Saunders' for Expenses		5 50
March 9	"	" J. Campbell and Son's for Stationery		29 90
13	"	" G. Groves for Stamps and Envelopes		1 75
23	"	" J. Cuthbert's for Binding Reports		4 00
April 19	"	" R. Gourley's for Writing		30 00
	"	" J. Hindson's for "		2 50
	"	" Grant and Co's. for Advertising		3 00
	"	" J. E. Ellis's for Cab hire		1 00
	"	" Express Charges on Fruit to N. S.		4 35
	"	" Rev. R. Burnet's for Downing's Fruit Book		6 20
Sept.	"	" Account of Committee examining County of Elgin		24 20
	"	" Wm. Saunders's account for Expenses		4 60
	"	" Beadle and Buchanan's for Trees and Vines		372 61
	"	" E. S. Leavenworth's account Printing		34 25
	"	" Rev. R. Burnet's account Expenses &c.		12 30
	"	" A. B. Bennett's account Expenses		4 00
	"	" Secretary–Treasurer's Salary		100 00
	"	" Prizes as per Vouchers		112 00
	"	" Prizes for Curculio		30 00
	"	" Account for Electrotype Eumelan vine		2 75
	"	" Express Charges on same		0 80
	"	" Secretary's Travelling expenses for year		47 96
	"	" " Account for Postages, Telegrams, &c		59 75
	"	" Freight and Express Account		47 86
Sept. 26	"	" Balance, Cash on hand		474 95
				$1551 73

We, the undersigned, having been appointed Auditors to examine Books and Accounts of the Treasurer of Fruit Growers' Association, beg to report that we have examined Books and Accounts, also the Vouchers, and find them on comparison to be quite correct, and that the foregoing is a correct abstract.

The balance in Treasurer's hands on 26th September was $474 95, in addition to this there is to the credit of Association in N. D. Bank, including interest made up to 30th June, 1871, $389 89.

We also annex memorandum of disbursements since close of current year to date, amounting to $204 82, for which we have compared vouchers.

WM. J. MCCALLA. } *Auditors.*
W. L. COPELAND, }

St. Catharines, January 2nd, 1872.

Abstract of Treasurer's Account for the year ending 23rd September, 1872.

RECEIPTS.

1871, Sept. 26—To Balance Cash as per last Audit	$474	95
July 11—To amount Special Deposit withdrawn from N. D. Bank	405	47
Sept. 14—To Government Grant	500	00
To Members' Subscriptions during year	1632	00
	$3012	42
1872, Sept. 23—To Balance Cash in Treasurer's hands	$115	46

EXPENDITURE.

1871-2—By Amount paid Prizes and Awards, per Vouchers	60	50
" " Expenses of Directors and Committee Meetings	138	80
" " Stationery and Printing	151	12
" " Electrotype and Coloured Lithographs	263	09
" " Postages and Telegrams	142	40
" " Advertising	110	00
" " Express Charges and Freight sending out Trees, &c	188	30
" " For Trees and Vines as per Voucher of D. W. B	1492	60
" " Copyist	96	00
" " Sundries	4	15
" " Secretary-Treasurer's Salary	200	00
" " Grant to Entomological Society	50	00
" Balance Cash in Treasurer's hands	115	46
	$3012	42

We, the undersigned, beg to report that the foregoing is a correct abstract of the books of Treasurer, Fruit Growers' Association. That vouchers have been furnished and examined, and all seems correct.

WM. J. MCCALLA, } *Auditors.*
W. L. COPELAND, }

St. Catharines, September 23rd, 1872.

THE PRESIDENT'S ADDRESS.

The year of grace 1872 will always remain a notable era in the history of the Fruit Growers' Association of Ontario—memorable in its annals as the year in which, from small beginnings, it has increased to over 1,600 members. The onward march of the Society's progress has been somewhat remarkable, and can only be accounted for on the faith the public have in the excellence of its aims. We are perfectly persuaded that had last year's report been in the hands of our membership in December or January, our list would have amounted to-day to not less than two thousand members.

There is, however, a good time coming, and the forecasting we made in our last annual address, that our interests and aims were only second to the agricultural interests of our Province, will yet be realized. Our Society is becoming a power in the land—a power for good. This power for good has been evoked by the admirable direction of the affairs of the Association by those more immediately connected with its government. I should certainly

fail of my duty, in being permitted to have the honour of addressing you, did I not particularize the names of Saunders, Beadle, Mills, Holton, Arnold, Bennett, Leslie, and Allen—gentlemen who have been always indefatigable in advancing the best interests of our Society. Indeed, the serious labour entailed upon our Secretary by our very success must sooner or later engage the deliberation of the Association. The amount of duty which he has discharged during the past year is something enormous. His correspondence alone would almost keep an amanuensis employed.

In speaking of the efforts put forth by the Association as telling upon the Province, evidenced by the large increase of membership, we are strongly of the opinion that much sympathy has been felt for and exhibited by the public towards the Society from the fact that our funds are economically managed, and from a large amount of money being disbursed at the lowest amount of expense to the Society. The mode, too, of expenditure has something to do with our palpable popularity—in fact, we have taken the country by storm through our liberality. The return of the fee for membership, in the shape of fruit trees for trial, the benefits being thus secured both to the member himself and to the country, has had much to do with our prosperity. The past direction which this outlay has taken ought to be followed up in the future, and every available means taken to educate our people, not only in a taste for good fruit, but also in the knowledge of good fruit trees. This distribution of trees in the past has produced wonderful results, and we believe that if the Directors exhibit the care and prudence in the future which have characterized the distribution of fruit trees, vines and small fruits, in the past, more important results will follow. The record of this course of action on the part of our Society will stand present and future testing, both by the published testimonies of successful trial of these fruit trees, and by the wide-spread, beneficial influence which the distribution of trees has exerted.

Next in importance to the distribution of fruit trees in benefiting our Society, has been the holding of meetings of our Association at different localities throughout the Province. We noted from our own experience these benefits as displayed at Goderich last year. Similar good has been effected by the successful meeting in Guelph in July last. We question if we have had anywhere a more spirited meeting than at Guelph—whether you take into account the lively devotion to horticultural matters by the inhabitants of the town, or the large amount of valuable experimental knowledge communicated to the Society by fruit growers from the surrounding country. It is no disparagement to the fruit growers at Guelph to say that the meeting of the Society was *needed*. We observe that the cherries exhibited at their Horticultural Show were divided into two classes, red and white, the names of either class being unattached! We imagine, too, that we, I mean the older members of the Association, learned also important lessons. For instance, that there ought to be a choice of similar varieties of trees for distribution, inasmuch as the tenderer varieties, of the same sorts, will not succeed in more northern latitudes of our Province.

In the same direction for advancing the interests of our Association has been the illumination of our reports with plates of the fruits of our distributed trees. This in the course of years will form a valuable record. To those of us who mingle much with amateur fruit growers, the increased interest evoked by our coloured plates must have struck us with great astonishment. Some of us incurred no little obloquy from the parties to whom we recently mailed our Report, when we could not furnish them with the coloured engraving.

By these foregoing and similar means will we keep the ball rolling. It is the duty, and ought to be the happiness of all our members to set their brains to steep, to devise the best means for the advancement of our Association—to use the language of a friend of mine. "Brains, Sir, there's nothing like brains."

This remark reminds me alike of my deficiency and of my duty—of my deficiency in being unable to enlighten or whet the intellect of any one of the intelligent fruit growers here present; and of my duty, that I ought to present, on such an occasion as our annual gathering, inferences and deductions drawn from our horticultural experience. My experience is so limited, my acquaintance with the general principles of our science so meagre, and my knowledge to use the rules of our art so inferior, that I must endeavour to give a mere summary of my success in pear culture — the varieties which I cultivate, and my mode of cultivation.

In my first essay in pear growing I had the good fortune to stumble on the grand first principle of fruit production. I refer to a dry soil. Before I planted a tree I thoroughly

trenched and drained my lot. My trenching was to the depth of three feet fully, and then I placed the rich top soil in the bottom, trusting to after enriching to prepare the surface soil for the proper reception and nourishment of the trees. Sufficient stress cannot be placed on the thorough drainage of the fruit farm. To say that it is an essential is hardly saying enough. Draining is a first essential; labour and skill would be thrown away without thorough draining. Draining we regard as much a requisite for fruit culture, as shelter is to animals from the inclemency of the seasons. It brings the condition of the soil into similar conditions with those of the atmosphere, and thus conduces to the health and productiveness of the plant. In addition to good drainage, it so happened that the contour of my lot required a large amount of filling up, almost six or seven feet in some places. On this artificial embankment many of my pears were planted, and all of them have done well. They seem to luxuriate in the depth and warmth of the virgin soil of which it was composed.

My choice of trees at first depended much on those with whom I came in contact—I might with truth say entirely depended on the advice of friends. The Seckel, Louise Bonne de Jersey, Glout Morceau, White Doyenne, Stevens' Genessee, Passe Colmar, Napoleon, and Beurre Diel, were first attempted. If successful culture in any way depends on taking prizes, I may be said to have been a successful grower. I wish to speak, however, of the relative merit of these and other varieties. We are of opinion, after years of cultivation, that the Seckel is ranked much too high. Its diminutive size will always prove a great drawback to its commercial value. This is proved by its past and present market price in Boston, New York, and Philadelphia. It can never compare in value to the Clairgeau, Bartlett, or even Winter Nelis. It is said—I have often heard it repeated—that the Beurre Clairgeau brings from five-and-twenty to thirty dollars in the Boston and more southern markets. We question if Seckel would bring more than ten. Flavour, exquisite flavour, it certainly has, indisputably so, but flavour cannot stand before size in a market point of view. No, we have for many years greatly preferred the Flemish Beauty to the Seckel, and we do not despair to see it yet adopted by pear-growers as the standard of excellence. Whether one takes into account its size, shape, excellence of flavour, freedom from grittishness, or the hardiness of the tree, it claims pre-eminence over the Seckel. It thrives and bears well at Hull, opposite Ottawa, and even further north. The shape and quality of the fruit, and the singularly exquisite symmetry of the tree, render it all that could be desired. In fact, it has all the characteristics of a good tree—health and hardiness, fertility, vigour of growth, and persistency of foliage. We are at a loss to mention a tree or a fruit that commends itself more to the fruit grower.

The Louise Bonne de Jersey is scarcely second to the Flemish Beauty. It grows, perhaps, over a more extended area than the latter does. In every part of the southern section of the Province of Ontario it does well. With us, in the neighbourhood of Hamilton, it is most prolific and thrifty. Perhaps for a profitable market pear there are few or none to beat it. When the fruit is thinned out it arrives at a commendable size. The only fault of the tree is that it is apt to overbear; it requires constant thinning out, and will under these bear profusely every year. This quality tends to commend the Louise Bonne de Jersey, as quite a number of varieties bear well only every alternate year. On the whole, as a profitable pear both for the amateur and the professional, perhaps there is no one pear equal to the Louise Bonne.

The White Doyenne, though highly and justly esteemed, has never been a pet and favourite in our estimation. Its congener, the Gray, is a pear which we much prefer, but which is not much known, and therefore less cultivated. We raise splendid White Doyenne, but better Gray; in fact, with us it is almost preferred to the Sheldon, which is sometimes apt to be deformed in shape—the Gray Doyenne seldom or never. We are aware that the White Doyenne has much money in it to reward the cultivator—it is a valuable pear. Some years, however, we have had it crack, and even get greatly gnarled. This latter fault is a great drawback, when rent and livelihood depend on the excellence and beauty of the fruit.

The Glout Morceau is an A. 1. fruit, but enjoys the unenviable notoriety of having a great many drawbacks to its excellence. It gnarls, and is full of gritty knots, and is seldom, very seldom, free from them. When perfect, it is excellent, the flesh buttery, piquant and juicy. Our experience of the tree is, that on stiff clay soil "it blights," as much if not more than any other variety of pear. I have only one tree left of this variety that has not fire-blighted. The most beautiful pyramid in my garden blighted this year, full of fruit, and in

early spring giving every indication of health and fertility. We have found, that owing to its knotty and gnarled appearance, it does not attract buyers—rather does it repel them. One year out of five it may bear a crop of fair excellent fruit; the estimate is not understated.

The Steven's Genessee is not worth cultivation. It is true that it bears large, showy fruit, but it is a poor keeper, and its fruitfulness is very uncertain. It is apt to be wormy with me, and I never had much satisfaction in its cultivation. I am now gradually topping over this variety with better sorts—by a kind of bud-grafting, brought to my notice by my friend Mr. Peter Murray, lately of Taymouth, Scotland.

The Passe Colmar has many of the bad habits of the Glout Morceau. It "blights" badly and early. At times it grows enormous fruit, in fact, abnormal. In such a case the excellence of the fruit is undoubted. Allowing every man to enjoy his own individual taste, I am ready to declare in reference to mine, that I know of few pears that in point of quality can compare to the Passe Colmar. Luscious it is, and that term scarcely adequately describes it when fully grown and fully ripe. To add that it is an ugly, ill shaped pear, is only the truth, although it costs me a little qualm of conscience to say this of one of my pets.

"Napoleon" is only a third-rate pear; perhaps by saying *that*, I am ranking it too high. It is pretty enough when well grown; in some years, especially of sunshine, the flavour is not so bad, but as a general rule it is a poor watery pear.

The same cannot be said of the Beurre Diel. It is a first-rate pear, considering size, shape, flavour, and fruitfulness. It is really a prolific grower, and grows to an enormous size. I have grown so large that a tyro would have mistaken them for the Duchess. They do well, both as dwarf and standard. The fruit, however, is larger, and we think, better on the dwarf than on its own stock. On its own stock, it is an enormous cropper, the fruit fair and ungnarled, of medium size, and exquisite symmetry.

My second pear list was more my own choice, if I may be allowed the expression. Here I cannot resist the impulse to say how fruit growing increases the desire to excel others, and to enlarge the number under cultivation. My desire for new varieties soon grew into a passion, and I fear I broke the last commandment, as often as I saw my neighbour have a showy pear or a large dunghill. My next addition of twenty-five trees only whetted my appetite for more. A few of my new varieties were, Onondaga, Madeleine, Easter Beurre, Theodore Van Mons, Henry IV., Duchess d'Angouleme, Gray Doyenne, Bartlett, Belle Angevine, Ambrosie, Beurre d'Anjou, Bergamotte Cadette, Dearborn's Seedling, Brandywine, Osebano, Winter Nelis, Rostiezer, Belle Lucrative, William's Bon Chretien, Vicar of Winkfield, Beurre d'Amalis, Lawrence, Sheldon, and a few duplicates of the few I had.

My experience of the Madeleine is, that it blights so badly that it is worthless as a variety for market purposes. I have succeeded in raising a few good samples of this fruit by triple working. At present there is no symptom of fire-blight on my grafts, though I have had it more or less all round. The Elliot's Early, we are persuaded, will take the place of both the Madeleine and Doyenne d'Ete. This pear, which was originally raised by Judge Elliot of Michigan, in the neighbourhood of Amherstburg, was introduced to public notice by Mr. James Dougall, of Windsor, to whom the fruit growers of our Province owe a deep debt of gratitude for his persevering efforts in introducing new and foreign varieties of pears into Canada. The Elliot's Early commended itself greatly to the Committee on Seedling Fruits—a report of which Committee has already appeared in the *Canada Farmer*. In passing, we may mention that Mr. Simon Roy, of Berlin, raised some beautiful specimens of this fruit this fall.

The Onondaga, or Swan's Orange, as it is called, thrives superbly well at Hamilton, and does well on clay soils. To those who are fond of a subacid fruit, there are few pears that can compare with the Onondaga. Its superb size and beautiful golden colour commend it to the amateur, though it must be admitted that a few are not partial to it on account of its tartness.

The Easter Beurre is a noble pear. With me it retains its monkish excellence, and I am as ready to crack it up as any churchman of the olden time. Perhaps, too, the season of the year at which it ripens has something to do with the esteem in which we hold this pear. It helps to grace the table at Christmas and New Years' times, and association with the pleasant has much to do with our likes and dislikes. For flavour and butteriness it is scarcely to be excelled. Its name indicates its time of ripening in March and April. I have kept it in good condition to the twenty-fourth of May. It has a tendency to grit, but a plentiful supply of leached ashes, as a top-dressing, will go far to remedy such tendency, and to give it a colour

on the cheek which is really superb. It is a pear which is indispensable in almost any collection.

The Theodore Van Mons is a light green, showy, pretty pear; I could scarcely call it first-rate. Henry IV. is to our liking, and is almost equal to the Seckel when carefully kept and well ripened.

The Duchess d'Angouleme is a mighty favourite with most pear growers. We must have and express our "own *think*" on this pear. We consider it very variable, and under some conditions an uncertain bearer. Let the spring be cold and damp, and the fruit will be sparse and scarce, and gnarled and knotty. In fact, in some years, and these at no distant intervals, it completely "damps" off, or rather, I ought to say dries off, just at the time when there is every prospect of its setting well. It is a pear that is very disappointing to an anxious cultivator, and yet withal it is a valuable pear. For size, and flavour, and excellence when well grown, it can hardly be beat.

The next pear that comes under our notice is a great favourite of ours, and would be with all fruit growers, if they only knew its excellence. I refer to the Grey Doyenne. It is infinitely superior to its congener, the white. For beauty on the dessert dish it can scarcely be excelled. Its deep and entire russet gives it a *distingué* appearance, which at once catches and captivates the eye of the amateur. We long for the time when it will come into general cultivation. The drawback, and drawbacks it has, is, that you can get plenty of fruit, but only a small modicum of wood. Grafted on a strong grower such as the Buffam, it does well.

Our's and everybody's favourite, the Bartlett, needs no commendation of ours. We should like to see our fruit growers unanimously give this old and well-known variety its former name, "William's Bon Chretien." On the continent of Europe, and in England, it is all but universally known under this designation.

The Ambrosie is not worth cultivation—it is positively worthless; like many other things it is more showy than good. I have topped my trees of this variety with more profitable sorts.

Beurre d'Anjou is so well known, that it is unnecessary further to allude to this variety than to say that it is Marshall P. Wilder's favourite pear. Its distribution among our members will bear a narrow inspection—the reports already received speak well of its undoubted excellence.

The Bergamotte Cadette and Dearborn's Seedling may go well together. We do not and cannot esteem either variety. Dearborn's Seedling has acquired an undue reputation. A different statement must be made of the Brandywine. To our taste it is one of the best of pears. When eaten just when ripe, it is something delicious—a day after it is ready it assumes a bitter acid, which renders it very disagreeable. It is a fine, large, showy and beautifully marked fruit when grown in the sunshine. It is not much known—the tree is a beautiful upright grower, foliage very green and close, and as a pyramid cannot be excelled by any other pear tree known to me.

The Osebano is a pretty little well flavoured pear, but is not such a favourite with me as with my friend Mr. Saunders, of London, on whose farm it does well. It unfortunately happens that the tree often gives way just when you might expect a plentiful supply of fruit—you nurse it through the trials of infancy, and just get it to maturity, as is thought, when suddenly it gives way, and bears the bitter fruit of disappointment.

The Winter Nelis is a superb pear—it needs no recommendation. Our Association should hold out a prize for any grower who would infuse a little bone and sinew into its branches, and to any reformer who would straighten out the boughs.

Few early pears can equal the Rostiezer. It is prolific, juicy, rich, and on the whole, a pear not to be despised. It will amply repay cultivation. There is money in it for the market. It comes in early, and although the fruit is small, it commands a good price.

The Belle Lucrative, or, as it is familiarly known, the Fondante d'Automne, like all the family of the *Fondantes*, is a splendid pear. Before we made the acquaintanee of the relatives of the Belle, we were quite pleased to rejoice in her smiles; but having tasted the excellence of the Fondante de Malines, and even of the Fondante du Comice, we cannot but give them the preference.

The Belle Lucrative is good, excellent, the Fondante de Malines is better. The tree is a better grower, the fruit is better flavored, the size of the fruit is larger.

That old variety, representative of a long-faced class of worthies—the Vicar—is like

many worthy clergymen, a hard nut to crack. Few people know *when* or *how* to treat him well. His excellence is often never seen—the more the pity. The Vicar should be laid and kept in a cool dry room, barrelled up is a good plan, and laid on its side, and then when the March winds begin to remind us of buds and spring, wrap him up close in flannel, or in a paper bag, and keep him in the dining-room from six to eight days according to the warmth, and then he will yield such a flavour and rich repast, as will give satisfaction to and call forth the praise of the most fastidious.

We have fruited the Beurre d'Amalis, and can conscientiously say that this fruit is far too little known. The beauty of the pear, its size, its rich mellow flesh, freedom from grit, should long 'ere now have commended it for general cultivation. When properly pruned, which is to leave it with long Dominie Sampson like arms, it bears bead-like strings of lovely fruit, which amply repay both the amateur and the producer for the market.

The Lawrence is among the best, if not the very best pear for winter use. We know few pears that are better and more luscious at New Year than this fruit. It keeps well, carries well, and deserves to be universally cultivated. The tree on its own stock grows luxuriantly, but the fruit is apt to spot, as if the rain had an affinity for its bright light beautiful green skin. On the dwarf it attains to a fine size, and as we think, to a good flavour. It is one of the best winter pears in this locality. Perhaps it reaches its greatest excellence in the Niagara District, luxuriating as it does in the fine rich alluvial deposits in the neighborhood of the Niagara River.

We have fruited the Vezouzier and have found it perfectly hardy in its wood during the severest seasons. The fruit is large and handsome—the tree an upright grower, and very thrifty.

The Willermoz is a large handsome pear, and is too little known and cultivated. It is a valuable winter variety, and amply repays the care of the pear cultivator. The blight sometimes takes this tree, generally on the trunk and leading branches, while the remainder of the tree appears to be good and the fruit good.

We desire to make mention of rather a remarkable pear tree, viz., the Beurre Navez. To those of you who are not acquainted with this pear, my description may seem extravagant. It is really well described as "a bag of juice." It is, however, not only juicy but rich in flavour, and of excellent quality. Mr. James Dougall was the first who brought this excellent pear to my notice,—it is in all respects a superb pear.

The Beurre Millet is the most remarkable pear in my collection. It is more highly coloured, of a deep mauve, than any other pear known to me. What is said of the colour may with equal truth be said of the flavour. I prefer it to the Seckel, which is indeed making a strong assertion. The appearance of this pear, just like the diminutive appearance of the Seckel, tells sadly against its many excellences.

Another pear demands a passing word, it is the Beurre Superfine. A sample from my garden may be seen in the collection at the palace grounds, entered for the $50 prize. The fruit is something beautiful, and *three* varieties, or three variations in colour and shape, may be gathered from the same tree. These are on the table for the inspection of the Association. Highly coloured, it has the brightest green spots interspersed amid the russet. The tree, which I got from Mr. Holton, Hamilton, may be said to lean to the tender side. In Hamilton and neighbourhood it does well, though apt to blacken for a quarter of an inch some years after it has been early pruned. This pear and the Beurre Bosc stand much in the same relationship as regards hardiness. Neither of them are entirely hardy, and yet both trees afford the best of fruit. The Beurre Bosc is rapidly growing into favour. Its peculiar peary form, russet colour and great excellence constitute an A-1. pear. It is one of the finest pears grown in all respects. It is not blighted with me; it is a little late in coming into bearing. We know of few pears that will stand comparison with it. Its very colour and shape have a charm. Deep russet, and inclining to the Vicar class in shape, though it has its own peculiar form, it yet strikes even a stranger to it as singularly peary. We know that the fruit is persistent, and notwithstanding the great weight of the pear hangs well on the tree. We can heartily commend the Beurre Bosc for cultivation in the more temperate districts of our Province. As a market variety, we know of few equal to it. Indeed there is a vast deal of money to be made out of it. We are aware that it is finding its way into general public favour. If any appear for sale in our market, they are quickly bespoken at any price the seller may demand.

The Summer Franc Real is also a pretty looking pear, but has the same drawback as the Beurre Bosc and Beurre Superfine. It kills back with the frost after early pruning in cold weather, and has a tendency to present the appearance of leaf-blight. The flavour and round appearance of the fruit commends it to the amateur, but as a variety for general cultivation, we could not recommend it.

We have fruited and tasted the Beurre Langelier, and are impressed with its good qualities. As a winter variety, we know of few better. It is indeed not so large as some other winter varieties, but it attains to a good size, the fairness of the fruit, it being little subject to insect pests, and its really good flavour, are rapidly bringing it into notice. It is well worthy of cultivation.

The Soldat Laboureur is a fine showy pear, but lacks persistency, and is apt to fall from the tree. A slight breeze is sure to bring the fruit down, and as it gets nearer to maturity the greater the tendency to fall off. It is of a peculiar dirty yellow colour, apt to russet in spots here and there on the shady side, and is by no means a prepossessing pear.

This cannot be said of the Delices de Hardenpont. This pear has a very bright and beautiful appearance, acquiring in the sun a perfectly red cheek. It is a prettily shaped pear, good to eat when ripened well, and the flavour is excellent.

The Ananas d'Ete is a pear too little known, and therefore too little cultivated. Thanks, however, to our reported discussions, the pear is gradually coming into notice. It has many good qualities. We believe it to be little inferior to the Bartlett, near whose season of ripening it comes to perfection. Its showy appearance renders it an object of attraction to the enthusiastic amateur. When pulled early and properly ripened in the house, the flesh and flavour are all that could be desired. We have never yet seen a gritty specimen.

A pear rapidly becoming an object of favour is the Beurre de Noel. We presume, from our moderate acquaintance with French, that the Beurre de Noel means the Christmas Beurre. It is a thrifty prolific grower. From six to ten generally grow upon a branch together, and notwithstanding the number on the cluster, they often attain to a good size. As a market variety we question if the Beurre de Noel has a successful competitor. It bears prolifically, and bears every year.

The St. Ghislani is a recherche pear. For amateur growers it has always seemed to me a model pear. It has a property, in an eminent degree, which I think the French call *fraiche*. It requires to be tasted to be understood. This pear ripens about the middle of September; and is a valuable early autumn pear. It is too tender to bear transportation.—marks easily; as a fancy fruit, it cannot be excelled for the brilliancy of its colouring and the crispness of its flesh.

This year, for the first time, we have samples of the Beurre de Beaumont. I will submit this pear to the taste of our Committee on New Fruits. It also appears in the collection for the $50 prize. It is a small roundish speckled pear, dotted with minute whitish spots.

I may be allowed to mention the Kingsessing, an excellent American variety. We have found that its keeping qualities are not first-rate,—it soon disappears, when once it has ripened.

It is premature to speak of the Goodale, though we have tasted it. Our experience of the tree is encouraging. With me it is perfectly hardy. I grow it on its own stock, and also on the quince. On its own stock, it is a very free grower and perfectly hardy.

Clapp's Favourite in its wood and growth might almost be mistaken for the Flemish Beauty. The wood is stronger, the stalk of the leaf firmer—in other respects, the colour of the bark, and the habit of the tree is not unlike that of the Flemish Beauty. Its fruit steadily advances in public favour—it is a favourite.

The Josephine de Malines, and the Baron de Mello may be placed as pairs. The excellence of the one may be justly ascribed to the other. The Josephine de Malines bears beautiful fruit. In point of excellence we fail to draw any distinction between it and the Beurre d'Amalis. The shape and flavour of the fruit are not very unlike—both are excellent pears. We are inclined to place them both in the front rank.

Another highly-flavoured and excellent pear for amateur cultivation is the Duchess de Berri d'Ete. Every year as my trees get older the fruit improves with me. When fully ripe, it has a most rich piquant flavour. A friend of mine, and a good judge in pears, wrote me the other day that it was not far behind the Seckel. But for a gritty tendency, it would rank high. Its astringent strong subacid flavour prevents it being a favourite with some.

Among the pears which I cultivate, few can compare with the Duchess d'Orleans, or, as it is generally known among pear growers, the Beurre St. Nicholas. As a market variety it stands among the foremost. It has a most taking appearance -- a bright ruddy cheek where exposed to the sun, with a shade of the most delicate pale yellow where protected by the leaves Its flavour is something delicious, and its size is not very far short of a large Louise Bonne de Jersey. We strongly recommend this pear for general cultivation.

The Graslin is a very superior fruit. It was first brought to my notice by Mr. James Dougall, of Windsor. At Windsor it grows superbly well, and attains to a great size and beauty. It does well with me. The specimens which I have raised have been splendid To have it ripened up to perfection, it must be kept in a close drawer, or what is better, placed in a paper bag. It attains its greatest richness about the first and second week in October. We cannot too highly recommend this admirable pear.

The Triomphe de Jodoigne is the next pear to which we desire to turn your attention. The fruit is very large and handsome. We say *very large*. We have fruited it, and when on the tree, it attracts the attention of every passer by. It is a strong luxuriant grower, with an amazing thick leaf. The fruit is superb to eat. When ripened up it is a triumphant pear. We rank it very highly in our collection. It deserves general cultivation, and owing to its hardiness and vigour will prove a great benefit to pear growers.

Elsewhere we have stated our opinion of the Madam Eliza. We have not changed that good opinion. It is of the Vicar class of pears, is a long and good keeper, large size, and of excellent flavour. It is good till the middle of November, and with care can be kept even later.

Some years ago we exhibited the d'Amalis panache. It is rather a remarkable pear. Its beauty consists not only in all the excellence of its congener the Beurre d'Amalis, but also in the marvellous beauty of its skin, being singularly striped with bands of green and yellow. It is a rampant grower and the wood is as beautifully marked as the fruit.

The Vicompte de Spoelberg is a luscious pear. Its shape is not unlike the Passe Colmar, its flavour rich, and the pear very juicy. It has a singularly sprightly flavour, and is a pear only to be known to be highly esteemed.

Among the finest of the sorts which I cultivate is the Fleur de Niege—a pear of singular excellence and beauty. It will amply repay a generous cultivation with abundance of fair fruit.

We cultivate quite a number of other varieties, but we are not aware that any of the remainder attain to greater excellence than those already particularized. Some are of rare excellence, such as the Beurre Gris d'Hiver Nouveau, Nouveau Poiteau, Doyenne d Hiver, Paradise d'Automne, Ott, Supreme de Quimper, Kirtland, and Rousselet de Stutgardt, Beurre Kœnig, Blanc Perne, General Todleben, Prevost, Marechal de la Cour, and a few others.

The judgment which has been formed, and here expressed, is not unlikely to be modified in the experience of others, owing to difference in soil and climate. The pear grower, however, may depend on the accuracy of my description so far as I have been able to express myself with decision. We have thought it best not to mix up new varieties with the old.

A new variety that has fruited in my garden during the summer, is the "General Negley." The fruit in shape is not unlike that of the Summer Franc Real, firmer, however, in the flesh and where exposed to the sun, very highly coloured with a deep dull red.

The importance of introducing new varieties was very early in the history of our Society seen by Mr. Holton, of Hamilton, who suggested the giving of a prize for their production.

We continue to foster the introduction of new varieties, not only of the pear, but of the apple, crab, plum, grape peach, strawberry, and other small fruits. Nobody can overestimate this important branch of the efforts and aims of our Society. We are persuaded from the rapid march of horticultural progress of late, that better fruits than we now possess are not only probable but possible. During the last year Mr. Dougall, Windsor, has forwarded to your committee a seedling cherry and a seedling pear, both fruits of superior excellence. Mr. Simon Roy, Berlin, sent the same pear as Mr. Dougall had done. Reports on these fruits have been forwarded to the *Canada Farmer* by the committee. Mr. Glass, of Guelph, has raised a beautiful plum, which perhaps the Association would do well to disseminate.

Mrs. Colbeck, of Hamilton, has raised a superb seedling peach, of great beauty, flavour, and size. —Mr. R. C. Cooper, of Hamilton, a very superior seedling plum. And thus the interest

in our Society keeps growing. Every effort stimulates to observation and action. There are many seedlings scattered through our orchards, which only require to be brought into notice to ensure cultivation. Since we commenced to prepare for addressing you, we have had our attention directed to a remarkable seedling shown at the present exhibition by Mr. Brooking, Dundas. It is not unlikely to carry off Mr. Holton's suggested prize.

I feel that I have trespassed on your time and patience. I cannot retire from the important office to which your favour has raised me without most heartily thanking the members of the Fruit Growers' Association of Ontario, for the unfailing kindness and forbearance which they have exhibited towards me during the lengthened period in which I have presided over their affairs. I have striven, I know, to do all I could for your interests, but it is not very much one called on to discharge other and more important duties can do for the members of a Society, every member of which, it may be, surpasses your President in the perfect knowledge of some one branch of our cherished culture. This remark reminds me very forcibly of your courtesy. On retiring from your honoured chair, I would respectfully suggest to the Association, perhaps not the least valuable of my suggestions, that their choice for my successor could not better fall on any one than on some gentleman who has leisure to devote to your interests, and that deep love of horticulture, which will render any burden in the charge of duty an abiding pleasure.

I will ever look back with fond remembrance to the happy and uniformly harmonious meetings which have characterised all our intercourse. The earnest desire of your retiring President is, that the same kindly feelings of love and affection which have marked the Society's existence in the past, may continue to mark the proceedings of our Association in the future, that a spirit of honest and earnest rivalry may so embue each of us, that our individual and single purpose may be to best advance our common interest.

Year after year reminds us of the ingathering of the fruits of autumn, and also of the Providential ingathering of the spirits of men, and of our members into the Lord's garner. An eminent member of our Society, himself the son of a most prominent member, and one of the founders of our Association, has passed away from us. I refer to Mr. William Craigie, Barrister, of this city. May such and similar lessons come home to each of us, and urge us to "do with all our might those things that our hands find to do." And when at last the chain of friendship which has bound so many of us together in labour and in love shall be broken; when the last link shall be sundered and the fruits of this world shall delight us no more; when the culture, training, and sorrows of earth shall culminate in the purity, perfection, and bliss of heaven, may we all sit down together at the feast of immortal fruits—

"Where Gilead's balm in its freshness shall flow,
O'er the wounds which the pruning-knife gave us below."

Robert Burnet,
President,
F. G. A. of Ontario.

Hamilton, 24th September, 1872.

REPORTS OF DISCUSSIONS

Winter Meeting.

The Fruit Growers' Association of Ontario held their usual winter meeting in the City Hall, Hamilton, on the 8th February, 1872. There was a large attendance of members from many parts of the Province, from Kingston and Oshawa in the East, to London in the West, including nearly every intermediate point.

The President, Rev. R. Burnet, called the meeting to order, and after the reading of minutes of previous meeting, the members listened to the reading of an essay by P. E. Bucke, of Ottawa, on Practical Climatology. W. H. Mills, Esq., read a paper on Radiation and its relation to tree growth. These papers were listened to with marked attention, and referred, with thanks to the writers, to the Committee on Publication.

Fruit in Manitoba.

Mr. Spencer, recently returned from Manitoba, where he had been largely instrumental in organizing an Agricultural Society, being present, the Chairman called the attention of the meeting to the fact, and requested him to take part in the discussions. Mr. Spencer very gracefully acknowledged the compliment, and being requested to give some account of the condition of fruit culture in Manitoba, made some very interesting statements. He said that scarcely any fruit was cultivated there, but there was an abundant supply of some of the small fruits found growing in a wild state.

The apple trees that had been introduced into Manitoba from more southern latitudes had all failed, and he believed the only way to secure trees sufficiently hardy to endure that climate would be to raise them from seed. There is a species of crab apple found growing there but it is too austere to be of any use. Wild plum trees abound there, apparently of several varieties, and many of these are quite good, much better than the wild plums found growing in Ontario. Raspberries and strawberries are found growing wild in great abundance, and are of good size and excellent flavour. Wild grapes are also found there, and two varieties of cranberry—the Trailing or Marsh Cranberry, and the Highbush Cranberry; the latter in great abundance. There is also a species of hop found in a wild state, which is very fine. The vegetables that are raised there are of excellent quality, and would compare very favourably with those of Ontario. The cattle were also very fine; the grade cattle of the country were not much behind the thorough-bred of our own Province.

Some of the members suggested that a Fruit Growers' Association should be established in Manitoba, to whom this Society might send scions of the most hardy varieties of apple, &c., and expressed the hope that Manitoba might be in this way soon supplied with many valuable fruits.

Overstocking the Fruit Market.

Mr. A. M. Smith read a paper on the danger of overstocking the fruit market, for which he received the thanks of the Association, and the meeting proceeded to the discussion of that subject.

Mr. Osborne spoke of the disappointment which many had met with this season in sending fruit to England, in some cases not realizing enough to pay expenses of shipment and sale. This he believed to be owing to improper management, and remarked that good paying prices had been realized by those who put up their fruit in a proper manner, sorting it well, packing it securely, and forwarding it promptly. The fruit of Ontario was not excelled by that of any part of the apple-producing region.

Mr. Durand believed that the production of a large supply of good fruit in any part of the country would turn the attention of dealers to us, and so increase the number of purchasers, that there would be a competition among the buyers that would secure to the grower good prices.

Mr. Clemens believed there was so large a part of the country but poorly adapted to the raising of fruit, that the demand existing there would consume all the surplus fruit that could be grown in the fruit-raising districts.

Mr. Watson thought that his experience did not indicate any lack of demand, for when he was a boy good Snow apples only sold for twelve-and-a-half cents, which now readily brought a dollar-and-a-half; and, reasoning from past experience, believed that the demand would fully keep pace with the supply.

Mr. D Hammond thought that the quality of the fruit raised was constantly improving, and that this had a tendency to keep up the demand. In his locality there was a good fruit market.

Mr. Spencer, of Manitoba, remarked that fruit can now be sent to Winnipeg, *via* Duluth, without any land carriage. If gentlemen present thought the price obtained for apples in Glasgow to be remunerative he would tell them that at Winnipeg, instead of selling for twenty-seven shillings and six pence, ordinary apples found ready sale at twenty dollars per barrel, and one had to be sharp to get them at that.

Sheriff Davidson stated that there was a time when at Berlin there was no sale at all for what little fruit was then raised there, but now the best prices were paid for good fruit. He mentioned also that he had found dry leaves an excellent material in which to pack apples.

Mr. Haskins complained that the Hamilton market was very poorly supplied with good fruit, that in fact the most of it looked as though the best had been taken out and sent to some other market, and expressed the hope that fruit raisers would at least be able to supply Hamilton with what fruit she needed.

Mr. Osborne exhibited to the meeting some fine bunches of Isabella grapes which he had kept, remarking that a considerable quantity of these grapes could be sold at this time, at prices varying from fifteen to twenty-five cents per pound, and said that if fruit raisers would take the trouble to preserve those fruits that were abundant in the autumn, until this season of the year, they would secure good prices and be well repaid for their trouble. On being asked how he had preserved these grapes in such fine condition, he stated that he allowed the grapes to remain on the vine until they were perfectly ripe, then when they were quite dry he cut them from the vine, handling the clusters carefully by the stem, and laid them in shallow boxes, first placing in the bottom a layer of dry leaves, and upon these a layer of grapes. In this way he filled the box with alternate layers of grapes and leaves, closing with a layer of leaves. The boxes were then nailed up tight, and buried in the ground in a dry spot in the garden, not sinking them very deep, but ridging the earth up over them. This morning he had dug them out with a pick, the ground being frozen, and found the grapes to be all in as perfect a state of preservation as those he now exhibited. He had been led to try this method from finding grapes on the ground in spring which had been covered during the winter with leaves, in a very fair state of preservation, and thought he would try the method he had just now described, and which in this instance had been so very successful.

Mr. Grey stated that one fruit-dealer in Toronto had, last fall, imported over two tons of grapes, which he thought might as well be grown in Canada For the past thirty years prices had been good in that market, and he believed they would continue so.

Mr. Woolverton thought it might be possible to exceed the demand for summer apples, but in winter fruits there was no danger.

Dr. Cross thought there was danger of growing too many of the small fruits. He had sent strawberries to Toronto for which he had realized nothing, and last year was unable to sell his Bartlett pears, the dealer in the city telegraphing to him not to send them.

Mr. Caldwell thought the demand for first-class fruits was continually on the increase; of these the supply would never be too great.

Mr. Graham said that at Fort Erie there was a constant demand for fruit, especially for apples, pears, &c., the Buffalo market taking everything they could raise. Cider apples were bought up, at very good prices, for the manufacture of vinegar.

Mr. Allen, of Kingston, would discourage the production of any but the choicest varieties of fruit, and the sending to market of any but choice samples. A gentleman near Poughkeepsie, N. Y., sent annually to Europe several thousand barrels of apples, each apple very nicely wrapped in silver paper, and for these he obtains high prices. The wrapping of each apple secures a careful examination of each, and the rejection of all that are imperfect. He believed that the very production and sending to market of choice fruit of itself created a demand, and that the more abundantly consumers were supplied with good fruit, the more they would consume.

Distances of Planting.

The second question was taken up after recess: At what distance apart should apple and pear trees be planted?

There was a very general expression of opinion, the burden of which seemed to be that about thirty feet apart each way was a suitable distance for apple orchards, but twenty feet each way was quite sufficient for standard pear trees.

Some of the members thought that some varieties of apple, those that did not make large spreading heads, such as the Early Harvest, Duchess of Oldenburgh, Northern Spy, &c., might well be planted at twenty feet apart each way.

Mr. Caldwell remarked that it was found to be desirable to plant trees much closer together in the northern districts—say in Minto, Garafraxa, &c.—than in the Niagara district. The trees in the northern sections suffered so much from cold that it was necessary to plant with reference to the peculiarities of that climate. When planted close together, and trained low, the trees protected each other, so that while a distance of forty feet each way would be very suitable in the warmer and more southern parts, in the northern he

would advise planting apple trees not more than 25 feet apart each way. From his own observation he could say that long-stemmed trees in that part of the country were not the thing, and that those who had tried the experiment of low training and close planting had been much more successful.

Mr. Grey, of Toronto, fully coincided with Mr. Caldwell. The planters in the northern sections were enquiring for low-headed trees, having become convinced of the superiority of such trees for their locality over the old-fashioned style of long trunks. It might also be well, he thought, to plant the pear trees between the rows of apples.

Mr. Morden advocated planting the trees further apart than the distance recommended by Mr. Caldwell, on the ground that when planted so near together, the roots of the trees would soon interlace and exhaust the soil of the requisite fertility. On this account he advocated planting trees at considerable distance apart. He spoke of an orchard which he had grown in the County of Hastings, where he had pursued the plan of wide planting and high training, and believed the orchard had been a success, comparing favourably with any.

Mr. Morse was partial to the quincunx form, planting the trees in rows thirty-three or forty feet apart each way, and then planting an intervening row by placing a tree in the centre of each square formed by four trees. He thought that in this way the desired protection was secured, while at the same time the distance was so increased between the individual trees that no evil effects would arise from interlacing of roots or branches.

Some remarks were made upon the correspondence existing between the form of the top and the form of the root, some maintaining that those trees which formed a broad spreading top also threw out wide spreading roots; while those having a fastigiate top sent their roots more perpendicularly into the earth. To this it was replied that as our trees were grafted upon some seedling stock, it was probable that the roots would assume the style of growth natural in the seedling stock, and not that of the inserted grafts. This led to some discussion upon the influence which the scion exerted upon the growth of the stock. Some instances were mentioned where it was manifest that the root growth was affected by the scion, but the instances that are well authenticated did not seem to be sufficiently numerous to admit of any general conclusions on this point.

Plants for Distribution.

The meeting having been asked to state what trees or plants the members desired should be sent out for trial, it was suggested by Mr Ball, of Niagara, that it would be well to give some nut-bearing trees a trial, such as the Filbert, which he believed had done well in some localities.

The President remarked that he had succeeded in raising them at Hamilton.

Mr. C. Arnold, of Paris, stated that he had grown the English walnut (*Juglans Regia*) and that last year they ripened nicely.

Other members remarked that they had succeeded in growing the tree, but not the nuts

The President then announced that any suggestions with regard to the kind of tree to be distributed hereafter would be acceptable from any member, and that suggestions might be addressed either to the President at Hamilton, or to the Secretary, at St. Catharines.

Meetings.

The places for holding the succeeding general meetings of the Association for this year were then discussed, and it was decided that the summer meeting should be held in Guelph, at the call of the Secretary, and the fall meeting in Toronto. The annual meeting for the election of officers, &c., will be held in the City of Hamilton during the week of the Provincial Exhibition.

Forming Heads of Orchard Trees.

The third question was taken up—At what distance from the ground should orchard trees be made to branch?

Mr. Martin favoured low heads. He thought these shielded the trunks of the trees from the heat of the sun in summer, and that on such heads the fruit ripened earlier and was more easily gathered.

Mr. R. N. Ball thought that six feet from the ground was a very suitable height, answering well for all purposes. The ground could be cultivated under such trees, the fruit could be conveniently gathered, and when the trees acquired size they sheltered each other sufficiently.

Mr. Caldwell advocated low heads as necessary in the colder sections, and thought that ploughing and deep cultivating in the orchard was very injuricus to the roots; also that when the trees branch low the weeds are unable to make any luxuriant growth, being too densely shaded by the tree tops.

Mr. Morden was opposed to low heads; believed that in practice it only amounted to growing three or more trunks instead of one. He thought, from his own experience in the County of Hastings, that there was nothing gained by training trees low.

Other gentlemen stated their views, the majority of whom were in favour of forming the head at about six feet from the ground. If the branches came out lower than this, the weight of fruit and leaf soon bent them to the ground, so that great inconvenience was experienced from these pendent branches sweeping the ground. There is a just mean in this matter, which may be varied by the habit of growth of the particular variety, or by the peculiarities of climate and exposure to winds.

The discussion was enlivened at this stage by the reading of a carefully prepared paper by A. Macallum, M.A., on "Some of the meteorological conditions that obtain at Hamilton." His Essay was received with thanks, and referred to the Committee on Publication.

Cropping Orchards.

The fourth question was then considered, namely—Should any crops be grown in the orchard?

Mr. R. N. Ball thought it was well to cultivate the orchard while young with crops which did not exhaust the soil, as peas, beans, &c.; but that after the trees have come fairly into bearing, no crop whatever should be grown in the orchard.

A large number of members expressed their opinions, but the prevalent opinion was strongly in favour of growing only such crops as those mentioned by Mr. Ball, or other hoed crops, as turnips, &c., while the trees are young; and that in no case should crops of grain, as rye, wheat, &c., be grown in the orchard.

Varieties of Apple—what Proportion?

The fifth subject was—In planting orchards what should be the proportion of summer, fall, and winter apples, in every hundred trees?

Mr. R. N. Ball would plant all winter fruit, if planting for market. Would plant no more summer and fall fruit than was needed for home use.

Mr. Arnold thought that some summer fruit might be safely planted for market, such as the Benoni and Summer Strawberry. There was but little demand for fall apples. At that time grapes, pears, and sometimes peaches, filled the markets, and when these could be had in abundance the demand for apples would be light.

Mr. Allan thought that by far the larger part should be winter sorts.

Mr. Caldwell advised that two-thirds of the apple orchard should be of winter varieties, the other third to be made up of summer and fall sorts. This arrangement was about what each required for family use, and would meet the requirements of the market.

Mr. Watson remarked that for six weeks in the fall after the early apples were gone, there were no good table apples to be had in the Toronto market at any price, and that good dessert apples would there command a ready sale.

Mr. Smith thought that orchardists had made a great mistake in confining their planting so exclusively to winter varieties; that there was a considerable demand for summer apples, much greater than the present supply.

Mr. McGill would plant one quarter of his orchard with summer apples.

Decay of Bark on Apple Trees.

Mr. Morden enquired what was the *cause* of the loosening and decay of the bark on apple trees? He said that this decay of the bark occurred on the trunk and main branches,

and generally on the south-west side of them. It sometimes extended for a considerable length on the trunk of the tree, and even below the snow line. After a time the bark becomes discoloured at the affected place, gradually becoming dry, dead and black, quite down to the wood.

Mr. Beadle remarked that he had noticed this disease in his own part of the Province. It was usually in the form of a black spot, of variable size, sometimes on the trunk of the tree, sometimes on the large branches, and always on the south and south-west side, where the surface was exposed to the direct rays of the sun. When the tree inclined to the north-east, or the branches extended horizontally to the north or north-east, and were exposed to the full power of the sun, there these injuries to the bark were found. He had never seen them on those branches which extended southward, or that grew nearly upright, nor on the trunk of a tree that stood perpendicularly, or that leaned towards the south or south-west. When the branch of the tree or the trunk inclined so that the sun's rays fell on them at right angles to their surface or nearly so, then these black spots appeared. He believed they were due to the action of the sun, perhaps the joint result of frost and sun-heat. It might be that the mischief was done in the later days of winter, when the sun has acquired considerable power, and the nights are very cold with severe freezing, and the air remaining frosty during most or all of the day, while the unclouded sun is shining with full power on the bark of the tree. He had never seen any such injury on any other side of the tree, nor on any trunk of a tree not thus inclined, nor on any where the trunk or limbs were screened from the sun's rays. An examination of the injured spot revealed no cause, but presented an appearance as though the injury had begun in the inner bark, next to the wood of the tree. He suspected that a careful examination of the trees spoken of by Mr. Morden would show that they were thus exposed to the action of the sun, and that the only remedy was protection in some way from the sun's rays. The fact mentioned by Mr. Morden that he had never seen the Northern Spy thus affected, strengthened Mr. Beadle's views, as this tree was remarkable for its perpendicular habit of growth, on both trunk and branches.

Mr. Allen was of opinion that this affection was due to solar heat. It was well known by woodmen in the neighbourhood of Kingston that forest trees decay chiefly on the south side.

The President had seen this disease, but never where the trunks of the trees were shaded. Apricots and nectarines will thrive well on the shaded side of the house, but fail when planted on the sunny side.

Mr. Bagwell had caused a new wood to form over these injured spots by carefully cutting all the dead parts away, quite down to the wood.

The President had also succeeded in causing such a growth, and believed it had been greatly promoted by covering the wound with a thick plaster of mingled clay and cow-dung, which had shielded the injured part from sun and air.

Considerable discussion ensued as to the action of frost and sun upon the cells when filled with sap. Intense frost crystallizing the sap, and so causing it to expand, might rupture the cells in which it was contained. And perhaps when not ruptured by the crystallization of the sap, but considerably distended by this cause, the sudden increase of heat from the sun's rays might so expand the air contained in the cell, before it had melted the sap, as to rupture the walls of the cell, and in this way cause the destruction of the tissue.

Mr. Beadle's Work on Canadian Horticulture.

Mr. Morden introduced the following resolution, seconded by Mr. Townsend:—"That this meeting is much pleased to learn that the Secretary of this Association has prepared a work on fruit culture and gardening in Canada." He supported this motion by stating that a Canadian work of this kind was very much needed, and he believed that Mr. Beadle's forthcoming work would do much to advance the interests of fruit growers in this Province.

Mr. Allen remarked that it was of the greatest importance to have such a work written by a Canadian, as all the American works fail to give the information most needed by Canadians.

Mr. Beadle thanked the meeting for their kind expressions of confidence in a work which they had not seen, and trusted that their expectations would not be wholly disap-

pointed. He requested the members who might take the trouble to look into the book to make a note of any omissions that might present themselves, and kindly favour him with their suggestions; for should such a thing happen as that a second edition should be called for, he desired to make it in all things as complete as posssble. It had been written for Canadians from a Canadian stand-point, and he should be most happy to receive from them any suggestions that should enhance its usefulness to his fellow-countrymen.

Subjects for Discussion.

The following subjects were suggested for discussion at a future meeting:
What system of drainage should be adopted for orchards?
What is the cause of trees being raised out of the ground during winter?
Is mulching beneficial?
What is the best time for pruning?
Is it profitable to the country to raise grapes for wine?
What is the best method of cultivating indoor grapes?

Display of Fruit.

There was a very considerable collection of fruit, principally apples, but including some nice pears and well kept grapes, laid upon the table. The Committee on Fruits made a careful examination of them, and reported thereon to the meeting. This report will be published in the annual transactions of the Association.

The meeting broke up at a late hour of the evening.

SUMMER MEETING.

The meeting was held in the Town Hall, Guelph, on Thursday, July 4th. 1872. There was a very good attendance of members from the vicinity, besides representatives from Kingston, Toronto, Oshawa, Berlin, Ayr, Elora, Galt, London, Hamilton, Dundas, St. Catharines, Brantford, Woodstock, &c.

The first subject discussed was the

Codlin Moth.

Mr. Allen, of Kingston, said that much damage had been done to the apples in his vicinity by this insect, but that something had killed them off, so that they were not troubled with them now.

Mr. Morden, of Dundas, stated that in some parts of the County of Hastings there was no codlin moth. That he had noticed that the Golden Russets were not apt to be much troubled with them, not so much as the Snow apple and other more tender fleshed varieties.

Mr. Chisholm, of Halton, said that these insects were becoming more numerous and injurious in his neighbourhood.

Mr. Bennett, of Brantford, thought they were not near as troublesome this year as formerly. He believed the birds helped to destroy them, for he had found the codlin worms in the crop of the cat bird. With him the Esopus Spitzenburg and Tart Bough had been least affected.

Mr. Denton, London, believed they were worse in old than in young orchards.

Mr. Caldwell, Galt, thought that in his neighbourhood these insects had had their day, and that they were now on the decline, yet that it was very important to use every known means of lessening their numbers, such as gathering up the fallen apples, trapping and killing the insects, &c.

Mr. Anderson, of Puslinch, had a young orchard that had not yet been much troubled with these worms. With him the Snow apple had been most subject to their depredations, while he had not found any in the Duchess of Oldenburgh or the Red Astracan.

Dr. Cross, St. Catharines, remarked that though his orchard was young, yet out of some

twenty-five varieties growing in it, not one had escaped the codlin moth. Last year not one apple in ten escaped. He always picked up the fallen fruit, had used straw-ropes and killed a great many of these insects, yet there were enough that escaped to injure nearly all his apples. This pest was doing more harm than all the other insects put together.

Mr. Saunders, London, stated that a full account of the habits of this insect will be found in the Report of this Association for 1869, together with an excellent illustration showing its appearance in all its several stages of life, and the manner in which it injured our apples. He had no remedies to suggest beyond those already recommended in that report. He had found it also in the plum, thus establishing the fact that it was also in this fruit, which was not generally known.

Mr. Roy, Berlin, had found it in all varieties of apple except the Swayzie Pomme Grise. Two years ago he had not a codlin moth on his premises, but last year nearly every apple was badly injured, excepting the Swayzie. Thus far he has seen nothing of them, and thinks the fruit will not be injured by them this season. Does not believe in the efficacy of the means recommended for destroying them, but thought the only effectual way of getting rid of them was to encourage and protect the birds.

Mr. Saunders replied that he could not see how the birds could be very effectual in destroying these worms, as they spent so large a part of their life within the apple, where they were out of the sight and reach of most of our insectivorous birds. He thought it unwise to promulgate the idea that man's attempts to lessen their numbers were useless, that we ought to use the intelligence God has given us, and do all we can to prevent the undue increase of injurious insects.

Mr. Elliott, Guelph, had been a great sufferer from their depredations, not one-fourth of his apples escaping. He had been very successful in trapping them by tying pieces of old carpeting around the trunks of his trees. In these he had frequently found fifty and sixty of the larvæ at a time. He examined them as often as once in ten days. Thought he had noticed that they were more destructive in dry than wet seasons. Had noticed but very little difference in the sorts. Pomme Grise had been very bad with them, the Wagner the most exempt.

Mr. Murton, Guelph, finds the Russets and the Greenings very badly affected.

Mr. Allen, Kingston, did not agree with Mr. Roy in the opinion that birds should be protected because of their usefulness in destroying insects, for he believed they destroyed as many useful as injurious insects. At all events he urged that the present law should be so altered as to allow gentlemen to protect their own orchards from the depredations of the birds, whom he had found to be quite sufficiently discriminating in their tastes to prefer a dish of ripe fruit to the most tempting morsel in the way of a hairy caterpillar.

Mr. Penham, Guelph, remarked that he knew a gentleman who had shot as many as a hundred and fifty birds in order to save a pint of cherries.

On motion of Mr. Saunders, seconded by Mr. Morden, it was Resolved—That in the opinion of this Association it is highly necessary that some united effort should be made by fruit growers in districts where the codlin moth prevails, and would urge upon its members the use, at the proper time, of the remedies that have been suggested to lessen their numbers.

The Pear.

Mr. Allen, Kingston, cultivated Louise Bonne, Flemish Beauty, Belle Lucrative, Seckel and Bartlett; found the Bartlett a little tender. The Oswego Beurre did well for a time and then died from the effects of a severe winter.

Mr. Caldwell, Galt, believed the cultivation of the pear to be as easy as that of the apple, and that a timely amputation of blighting or diseased limbs would restore the tree to its usual health and vigour. The following varieties he had found to be hardy: the Bartlett, Rostiezer, Flemish Beauty, Louise Bonne, Easter Beurre, White Doyenne, Sheldon, Seckel. The Seckel was very hardy in Garafraxa. Sometimes the pear tree seems to become bark-bound, and he advised the making of longitudinal incisions the entire length of the trunk of the tree, just through the bark; this will relieve the stricture, and afford room for the body of the tree to expand. Highly stimulating manures he thought injurious, and recommended the use of wood ashes and an annual washing of the body of the tree and the larger branches with soft soap.

Mr. Chisholm, Halton, grew the Bartlett, Duchess d'Angouleme, and Easter Beurre. The past winter had killed his Bartletts.

Mr. Morden, Dundas, prefers standard to dwarf pear.

Mr. Denton, London. had carted clay upon the ground where his pear trees stood—the soil was sandy—and found that the trees did not do well where the clay was put on too thick.

Mr. Lee, Guelph, found the Flemish Beauty the best variety of them all.

Mr. Fairly, Guelph, many trees suffered because they were badly planted, the soil not sufficiently broken up and pulverized; did not approve of manure for pear trees.

Mr. Phin, had a light soil and did not succeed well with pear trees.

Mr. Benham, Guelph, had been trying to grow pear trees for the last quarter of a century, lost his first trees; but for the last fifteen years had succeeded very well with dwarf trees—the reason why cultivators have not succeeded with Dwarf trees is that they have not planted them deep enough so as to have the Quince stock upon which they are worked wholly buried below the surface of the ground. The severe cold of winter frequently injures the quince stock when exposed, and hence the loss of the pear trees. The Bartlett is tender with him. Louise Bonne yields good fruit in great abundance. Howell succeeds, also Dearborn's Seedling, Seckel, Stevens Gennessee, Vicar of Winkfield, and Beurre d'Anjou. Had fruited the Chaumontel.

Dr. Cross, St. Catharines, would have a poor crop of pears this year. the Duchess d'Angouleme had failed to set its fruit very frequently. Marie Louise had not failed in this way. The Duchess was the only kind that had not blighted in his grounds. His soil is clay, and he keeps it well cultivated.

Mr. Murton, Guelph, thought the soil around Guelph well adapted to the growth of the pear, although for himself he had only some half dozen varieties, and none of these had ever blossomed. Here the Bartlett, Flemish Beauty, Louise Bonne and Beurre Diel are quite hardy, and some most excellent specimens of the fruit had been shown at their exhibitions. His Beurre d'Anjou tree had blighted, though there was not as much pear blight lately as they had experienced. Large quantities of raw barnyard manure were injurious.

Mr. Eliott, Guelph, has a clay soil which he prepared by deep cultivation, breaking it up thoroughly. As his pear trees were Dwarfs, he planted them deep enough to place all the stocks beneath the surface of the soil, and since planting mulches them thoroughly both winter and summer, using for the winter mulch suitable manure. This protects the roots from severe winter freezing, and in the summer keeps them moist and shields them from the intense heat of the sun. He prunes his pear trees in the end of summer, when the leaves begin to change, cutting the branch at some distance from the bud. This gives time for the wood to harden at the cut before the severe frosts of winter. so that the bud nearest the cut is never winter killed. He cultivates some fifteen sorts, the Bartlett, Beurre d'Anjou, Flemish Beauty, Louise Bonne, Soldat d'Esperin, which he finds to be be a very fine pear, hanging well after it is set, ripening in November and December, of firm flesh and good flavour. Belle Lucrative of fine quality, but requires to be used as soon as it is ripe. Dearborn's Seedling which is quite small, ripening early, and Duchess d'Angouleme. He uses wood ashes liberally, preferring not to force the trees into a too luxuriant growth by the use of highly stimulating manures. He finds the Buffam a pear of excellent quality, and the White Doyenne is very fine. does not scab or crack, and the samples compare well with those grown elsewhere. Does not think that the winter sorts are generally worth cultivating, they have no flavor.

Mr. Roy, Berlin, found but five sorts that were reliable in his section. The Flemish Beauty was the most hardy, then the Louise Bonne, Seckel, Rostiezer, and Beurre Diel. The Beurre Diel was very hardy, and so was Eliott's Early, a variety of very good quality, about the size of Osband's Summer. and ripening before the Doyenne d'Ete, which he obtained from Mr. James Dougall, of Windsor. The Supreme de Quimper he feared was a little tender. The Ananas d'Ete was a very hardy tree. but a poor cropper. Has lost several trees of the Beurre d'Anjou during the past winter. His Easter Beurre died. The Glout Morceau i very hardy and has never blighted with him. Cannot do anything with the Duchesse d'Angouleme. The Graslin is very good and a very hardy tree; the Kingsessing is tender. He advises mulching the trees, when heavily loaded with fruit, giving them a liquid manure. Cannot succeed with the Bartlett except it be double worked, he works it on the Grey Doyenne. The Beurre Giffard is tolerably hardy. Has worked the Beurre Bosc

on a variety known as Summer Rose. The Baldwin Apple when worked on the Summer Pippin does well. The Summer Pippin was brought from Pennsylvania by the Germans.

Mr. Stevenson, Guelph, has but few sorts in cultivation. Of these he places the Flemish Beauty first, for size and quality of fruit, and hardihood and productiveness of tree. Next to this he ranks the Seckel, then the Louise Bonne and the Glout Morceau. Is pleased with the Kirtland. He prunes his trees in the Spring, forming a low dense head. He has the Osband's Summer and Rostiezer, the latter a straggling grower, is on the quince stock. He prefers the pear stock. The Buffam he had fruited for three years and found it hardy, the fruit did not crack. The Belle Lucrative did very well, but was not quite as fine in flavor as he had expected, the fruit had been very uneven in size, some being of good sixe and other specimens very small. Does not get any fine fruit from the Duchesse d'Angouleme or the Vicar of Winkfield. The Napoleon does very well, so also does the White Doyenne, though this in some seasons cracks badly. His specimens of the Beurre Diel had not been as fine as he thought they should be, nor did he consider the tree perfectly hardy.

Mr. Alex. Glass, Guelph.—The Bartlett was tender with him, the White Doyenne did well and did not crack, the Grey Doyenne also did well. He had fruited these for five years. Osband's Summer fruits sparingly, but the quality is very fair. He finds the Bergamotte Cadette to be his heaviest cropper and hardiest tree. Stevens Gennessee yields fair crops, but is badly infested with the codlin moth. The Van Beuren does not crop heavily, but the sample is good. The Vicar of Winkfield is good, the Doyenne d'Ete has fruited twice; Clapps favorite looks healthy, and so does the Glout Morceau, but these have not yet borne fruit with me.

Sheriff Davidson, Berlin.—The Duchesse d'Angouleme fruits sometimes, but not as regularly as the Flemish Beauty. His Flemish Beauty has but few specimens of fruit this year, but last year it bore a heavy crop. On the pear stock it is a very hardy tree. Osband's Summer is a fine pear and succeeds well about Berlin. The Doyenne d'Ete ripens about the middle of August, is a pretty fruit, and the tree an abundant bearer; prefers it to any other summer pear. Dearborn's Seedling bears abundantly. The Winter Nelis bears large crops every year, the tree is hardy, the fruit is not equal to the fall pears, but it is very good. The Seckel bears well, and the tree is hardy and not subject to disease. He mulches his pear trees every autumn, putting it on from six to ten inches deep. Prunes in the spring.

Mr. J. A. Wood, Guelph, prefers the Bartlett. He seldom gets any good samples of the Winter Nelis, the fruit often becoming withered on the tree. The Jaminette is a nice pear, his tree was injured some the past winter. He has also the Flemish Beauty, Swan's Orange and Beurre Hardy; the latter he finds to be a very hardy tree.

Mr. Jackson, Berlin, cultivates a few varieties, but is ignorant of the true name of many, as those he has purchased do not turn out to be what the label indicated. He has the Ananas d'Ete, which is a first rate fruit, better to his taste than the Bartlett, the Flemish Beauty lacks flavor; has also the Osband's Summer and Beurre Giffard, the latter bears well. The Clapp's Favorite does well. The Bartlett is very generally grown about Berlin and does well. Doyenne d'Hiver seems to do well, but has not yet fruited. Steven's Gennessee rots at the core, but is otherwise good. The Seckel has not been a success in his hands, while the Vicar of Winkfield is bearing well.

Mr. Saunders, London, has suffered the loss of some of his trees of the Louise Bonne by reason of their breaking off at the point of union with the stock; and his Duchess d'Angouleme trees had some of them been injured by frozen sap blight.

Mr. Roy, had suffered in a like manner with the Louise Bonne, and had found the Duchess d'Angouleme very tender.

Mr. Stevenson, Guelph, had found the Bartlett very tender.

Pear Blight.

Mr. Caldwell, Galt, thinks this blight is caused by the severity of the weather.

The Secretary asked how this blight could affect seedling pear trees that had never yet seen a winter, but were nevertheless affected with this blight?

Mr. Allen enquired if the blight was bad where the land was richly manured.

Mr. Saunders replied that he thought the blight was due to certain atmospheric influences.

Mr. Stevenson had also known the young seedlings attacked by the blight before they had passed through a winter.

Col. Magill, Oshawa, remarked that the blight affected trees growing on light or heavy soils alike, that very old trees died with it, and thought that the summer had much to do with it.

The President stated that he had been informed by Mr. Bennett, of Brantford, that latterly he had been in the habit of using in dry weather a hydrant with a very fine rose, which threw the water up so that it fell upon his pear trees during the evening like a fine gentle rain, and that ever since he had adopted this plan of showering his trees they had not suffered from blight.

Mr. Hamilton, Toronto, has had those trees blight which were on light soil, but not those on heavy soil.

EVENING SESSION.

The Plum.

Mr. Lee, had given up the cultivation of the plum and dug up his trees in despair of ever growing any more fruit on account of the curculio.

Sheriff Davidson, Berlin, used to be troubled in the same way so that he had no plums at all, now he has plenty; he succeeded in growing plums by jarring the trees, after placing sheets under the trees, and in this way catching the curculio. He thought the Green Gage, Bleeker's Gage and the Columbia least subject to the attacks of this insect.

Mr. Allan, Kingston, adopted the same plan. He grows Coe's Golden Drop, Green Gage, Washington, Egg Plum and Damson.

Mr. Jackson finds the Lombard a desirable sort, it bore the third year after planting and is not very subject to the curculio. Prince's Yellow Gage also bears well. Common Blue Plum is very subject to black knot.

Mr. Glass, also jars the trees, and catches the curculio on sheets. He has the Bingham, the curculio is very attentive to this sort, in quality he esteems it his best; grows also the Early Orleans, Pond's Seedling, thinks the Victoria very tender and subject to the curculio; Magnum Bonum is a heavy cropper, and the fruit liable to rot in wet seasons, the tree very healthy; the Lombard is a great cropper and the best market plum; Imperial Gage is of second quality.

Mr. Roy, Berlin, finds the Victoria a tender tree, and the fruit fails to set, would not advise the cultivation of this sort, except in a specially favourable situation, when with careful cultivation the fruit will be truly magnificent. The Lombard is one of the very best croppers, yet he does not think it the most profitable variety; the Imperial Gage is more profitable. Pond's Seedling is tolerably hardy, bears good crops, and the fruit sells well. Prince's Yellow Gage does well about Berlin; Bingham is a little tender, but a showy and well flavoured fruit. The Reine Claude de Bavay ripened with him, which the President remarked was a singular circumstance, it rarely ripening at Hamilton. Was testing Gulin's Golden Grape, a new sort; thus far the tree had been perfectly hardy, but not yet fruited. The McLaughlin was a little tender. The Imperial Gage he considers the very best market plum, and well worthy of general cultivation. Lawrence's Favourite he had found to be a shy bearer and tender tree.

Mr. Jardine, Galt, cultivates the Yellow Egg and the Lombard, and believes that the curculio does not attack the Yellow Egg.

Mr. Leslie, Toronto, finds three great difficulties in the cultivation of the plum, viz:—the black knot on the tree, the curculio, and the rot in the fruit. The black knot may be kept in subjection by careful examination of the trees during the second week in July and cutting off all the affected parts; the curculio may be subdued by the diligent use of the means generally recommended, but for the rot he knew of no practical remedy. He thought the cause of the rot was of an atmospheric nature. The Lombard and Yellow Gage he placed in about equal rank. The Peach Plum does well. The Yellow Egg, Imperial Gage, Coe's Golden Drop and Reine Claude de Bavay are all good bearers.

Mr. Murton, Guelph, is successful with nearly all sorts, notwithstanding the black knot and the rot. The Bradshaw is particularly subject to the rot, yet it bears well and the tree is hardy. The Lombard is the most profitable, is a great bearer and escapes the curculio.

The Washington bears well. The black knot can be cut out in July and the wound will heal over. His favourite eating plums are the Bradshaw, Washington, and Coe's Golden Drop. The Damsons are not much affected with the curculio here, nor the Smith's Orleans

Col. Magill, Oshawa, esteems the Old English Green Gage the finest flavoured of all plums, but it never becomes a tree, and though some of his Green Gages are thirty years old they are nothing more than mere shrubs. The Monroe Gage ripens late, and the tree is very hardy and one of the finest of all, and when young is a very heavy cropper. The Lombard is probably the best for market Regards the Washington next in quality to the Green Gage. The late spring frosts probably have destroyed the plum crop in the neighbourhood of Oshawa this season.

Mr. Sunley, Guelph, thinks the Lawrence's Favourite the best sort he has.

Mr. Anderson stated that the Lombard, Washington and Victoria were killed by the past winter, but Prince's Yellow Gage was hardy and doing well.

Mr. Caldwell says that the Lombard and Imperial Gage are great favourites about Galt. The Duane's Purple does well there. The McLaughlin is the finest plum I have grown, but the tree is tender when young, the fruit is of fine size. The black knot is easily kept in subjection by cutting it out in the month of July. The curulio is the most destructive enemy. The rot gives us no trouble. Am sure that taking a series of years together, plum growing is a profitable business.

Mr. Hamilton, Toronto,—The black knot has destroyed nearly all the Plum trees about the City of Toronto. It is worse in trees bearing blue plums than in those of the yellow or green varieties. The Rot is worse when the weather is warm and moist.

Mr. Glass being asked to describle his new seedling plum, stated that the leaf is very thick and heavy, of a rich dark green, with a glossy shining surface. The tree a very vigorous, upright grower. Never has known a tree killed by the winter, not even the yearling buds, though they seem sometimes cut back an inch or two by the winter, the fruit sometimes is very large, weighing two and a half ounces, of a dark purple colour, with very heavy bloom. Two years ago, the parent tree bore from four to five bushels and there was not then, nor ever, any appearance of rot. It is a seedling from either Smith's Orleans or Duane's Purple. It is most like the Duane's Purple. Ripens from the 5th to the 10th of October. He asked that a Committee of the Association might be appointed to examine the plant.

Mr. James Goldie stated that Mr. Glass' seedling plum was of a very fine, showy appearance, perhaps not "best" in flavour, but promised to be a very valuable market sort.

Mr. Murton thought its showy appearance and large size would cause it to take well in market. In point of flavour he reckoned it as a second class plum.

The President and Messrs. Leslie, S. Roy, and the Secretary were appointed a Committee to examine, and report upon Mr. Glass' seedling plum.

Mr. Stevenson, Guelph, had tried a great many varieties, but had now cut them down to a very few, in truth he felt a good deal discouraged in the matter of plum growing. What with the curculio, black knot, and hard winters he had not been as successful as he would like to be. Had tried chloride of lime for the black knot but it killed the trees. The Victoria was a splendid plum, the ends of the shoots winter killed, but it does pretty well; bearing heavily for a few years and then giving out altogether. McLaughlin does very well. The Imperial Gage is a fine plum. The Columbia is very subject to the black knot. The Lombard, Yellow Egg, and Smith's Orleans are the most profitable with him. Goliath bears a great crop, and is hardy. The curculio is not quite as bad this year as formerly. The rot seems to be infectious. Coe's Golden Drop ripens very late.

Mr. Wood cultivates the Imperial Gage, Lombard, and Coe's Golden Drop with good success.

Mr. Fairley, Guelph, thinks the Lombard to be the least subject to the curculio, and black knot, and at the same time the most prolific.

Mr Peterson thought that the black knot made its appearance in trees growing in a poor soil, but not when the soil was in good heart. He did not think the rot to be infectious.

There not being time to discuss the subject of Strawberry culture, it was postponed to a future occasion.

The President for himself and the members from abroad, heartily thanked the Citizens of Guelph for the very kind attentions received from them, and assured them that the meeting had been very instructive and pleasant.

Mr. Peterson, seconded by Mr. Wood, tendered to the Association the thanks of the Fruit growers of Wellington and neighbouring Counties, for holding their summer meeting in Guelph, and for the many valuable suggestions and the important information disseminated through it at this meeting.

AUTUMN MEETING.

The meeting was held in Agricultural Hall, Yonge Street, Toronto, on the 9th of October. There was not as large an attendance of members as usual, owing to the holding of local fairs, yet there were present gentlemen from St. Catharines, Hamilton, Milton, Goderich, Guelph, Oshawa, &c., in addition to those from the city.

The President being absent, the meeting was called to order by the Secretary and P. Armstrong, Esq., of Toronto, was chosen Chairman.

After reading minutes of last meeting which were approved, the Secretary read a letter from Mr. Charles Gibbs, of Montreal, relating to a contrivance for drying fruit, and laid on the table some samples of dried apples, pears and peaches, together with a photograph of a model of the drier. Mr. Gibbs stated in his letter, that it was the invention of Doctor Ryder, of Loudon, Franklin County, Pennsylvania; that exclusive of an old stove and two or three hundred bricks, the drier can be made at a cost of from $8 to $16, according to length, that the fruit when prepared for drying is placed in a drawer which, when filled, is put in at the lower end, so as at once to receive the greatest heat and prevent the fruit from becoming discoloured, the drawers being taken out at the upper end as they are crowded up by putting others in at the lower end; that the hot dry air which passes *through* the lower drawer, does not pass through the second, but over it and over all the rest, so that there is no steaming but only drying of fruit.

The meeting proceeded to the discussion of *Grape-growing under glass.*

Mr. John Gray, of Brockton nurseries, near Toronto, read a very interesting paper upon the subject, for which the thanks of the meeting were voted to Mr. Gray, and he was requested to furnish the Secretary with a copy in time for publication in the next annual report.

In answer to a question Mr. Gray stated, that a house for growing exotic grapes, can be put up for six dollars a foot front, with span roof, and about twenty feet in width. That the best heavy glass costs thirteen dollars per hundred feet.

Mr. Ross of Goderich, stated, that he had been recently putting up a grapery 39 feet by 19 feet, with a curvilinear rafter, that the wood work cost him $150, the painting and glazing $60, the glass $54, and preparing the border between $50 and $60.

Mr. Gray does not recommend rough plate glass, and thinks 7 x 9, a better size to use than 8 x 10, that the glass should be bedded in putty and fastened with glazier's points, not using any putty on the out side of the glass, merely closing any crevices with a thick coat of white paint. He would make the front walls three feet high, and the building eighteen feet high in the centre. The vines when in full bearing should produce one pound of fruit to every square foot of glass, and sell readily in city markets for fifty cents per pound. In constructing a vinery, he would not advise that there should be any ventilators in the front walls at the bottom.

Second subject—*Fruit Trees in Orchard Houses.*—Mr. Gray remarked, that he would not advise that the trees should be planted in pots or tubs, but preferred them planted in the border. The roof of the orchard-house should be constructed with moveable sashes, that could be taken off entirely in mid-summer. The tress should be syringed with sulphur-water every morning. The young growth should be pinched-in, and the trees planted in two rows—eight feet apart, and eight feet apart in the row. The surface of the border should be top-dressed every autumn, with about four inches of fresh turfy loam, and the use of highly stimulating manures avoided.

The Secretary called the attention of the meeting to some seedling fruits that had been placed upon the table—a new seedling plum raised by Mr. Glass, of Guelph, and several new seedling grapes raised by Mr. William Reid, of Port Dalhousie.

Mr. Glass stated that the tree from which the plums now shewn by him were taken, had been grown by him from seed: that it was a vigorous grower, held its foliage until stripped by the autumn frosts, and that it had proved to be quite hardy at Guelph

and Berlin, enduring the winters without injury; that it was productive, bearing very large crops. The fruit ripened at Guelph by the tenth of October, and would keep for some time after being gathered. Members present expressed themselves much pleased with the appearance and flavour of the plum, and hoped that it would be disseminated and generally tested throughout the Province

Mr. Reid explained to the meeting at some length the various parents employed by him in producing the several varieties of seedling grapes which he had placed on the table, some eight or ten in number. He gave the members present opportunity to taste each of his new seedlings, some of which were of very fine flavour and handsome appearance. The meeting seemed to be particularly pleased with one of the black and one of the red coloured seedlings. After spending considerable time in the examination of these seedling grapes, it was resolved that the thanks of the meeting be voted to Mr. Reid for bringing before us this exceedingly interesting collection of grapes raised by him from seed, and that the Secretary enter into communication with Mr. Reid with a view to his supplying the Association with vines of his most promising seedlings for distribution among the members in order that they may be tested in various parts of the Province.

Third Subject—*Varieties of Grape most likely to succeed in the latitude of Toronto and northward.*

Mr. Thomas Brownlie named Rogers No. 3 (Massasoit), and No. 9 (Lindley), the Eumelan, which ripened with him by the 15th September, the Delaware, Concord and Hartford Prolific.

Mr. Ross has found the Eumelan to ripen at Goderich by the 15th September, and the Creveling at the same time. The Rebecca does well with him. He lays all his vines down before winter, prunes them and covers them with earth. The Martha ripens with the Concord. Rogers No. 3 (Massasoit), ripens the earliest of any. Rogers No. 4 (Wilder) and 19 (Merrimac) are good.

Mr. Stevenson, of Guelph, recommends the Creveling, Hartford Prolific and Delaware. The Concord does not ripen well with him, though it does in the grounds of some of his neighbours.

Mr. Gray said that the Rogers Hybrids, Nos, 3, 4, and 15 (Agawam) 9, 19, 33, 43 (Barry) and 53, were all doing well.

Doctor Cross, of St. Catherines, remarked that the berries of the several varieties of Roger's Hybrids were large and good, but that the bunches were very uneven in size; that there were very few good bunches on a vine; that on this account they were not suited for market, and about one-half as many pounds of marketable grapes could be obtained from any of them as from a vine of the same age of the Isabella or Hartford Prolific.

Mr. Ross said that the Isabella would not usually ripen in the vicinity of Goderich. That on account of the imperfect character of the bunches, the Rogers grape would not produce a crop equal to the Concord, This variety was very hardy, and bore large crops. The Israella ripened well and produced fine bunches, but the flavour was not very good. The Iona was too late for that part of the country.

Mr. Gray said that the Catawba, Diana and Isabella did not ripen at Toronto.

Dr. Cross thought the Concord a very sure cropper, that it would bear bad usage remarkably, and ripen its fruit. The Isabella ripens well with him, yields abundantly, keeps well, and is very good. He prunes so as to have no canes older than three years, and has uniform good crops.

Mr. Brownlie discards the Iona, Diana and Rebecca; they have not done well.

Mr. White, of Cooksville, said that in 1869 the Isabella did not ripen; but this year was ripe, and usually ripens well. The Catawba does not usually ripen. Had known it ripen only in one year, and that was in 1870.

On motion, adjourned.

RADIATION AND ITS RELATION TO TREE GROWTH.

BY W. H. MILLS, HAMILTON.

Assuming that we all feel desirous to succeed in fruit growing and tree planting, not alone from a mere sense of the number of dollars which might possibly flow out of the pros-

perous issue of such undertaking, but from a far deeper and more noble sentiment ; I allude to the unconquerable love of truth, that faculty which prompts a critical investigation of the laws of matter ; it is possible that few things are more gratifying than the sense of having overcome the difficulties which beset us in our studies of the physical basis of life.

The nicely adjusted and admirably adapted instruments, however, now used in making experimental tests, enable the investigator to analyze the properties of matter with more confidence, and greater accuracy, than by any means hitherto known.

Gifted with this faculty, and in possession of these aids, he proceeds to doubt every hypothesis, for the purpose of testing its truth. I confess I hold in high esteem, a doubter who can raise cogent issues.

He is obviously no mean individual, who can thus aid in placing an hypothesis in that exact position wherein it is capable of answering correctly all questions embraced within the scope of its phenomena.

But, since I do not approach in the remotest degree to the dignity of such a position, I will humbly content myself with the use of a few facts thus evolved by others, while discussing the action of radiation, and its relations to tree growth.

Yet I certainly do not know if I should have been justified in taking up the time of this meeting in the way I am now doing, had it not been that a few days ago, I received a polite note from your Secretary, in which he said, the Directors bade me request that you would favour us, at our next meeting, with a paper upon such subjects as you may choose, relating to the objects of our Association. That appears to be the only justification. In response it may be permissible to remark, that, owing to the short time intervening between the request and this meeting, it was barely possible to do anything like the justice the subject merits : hence you are asked to receive this paper at its value.

In looking over the questions set down in the programme of to day's proceedings, they suggested the importance of taking a view of some of the laws of evaporation and radiation, as having an important bearing on the successful pursuit of tree planting, training, and bearing.

Therefore upon the how, and the why, it is proposed to offer a few suggestions of my own, as well as some experiments made by others ; and I think that, in the course of these observations, it will be found that radiation and evaporation are two of the most important phenomena in vegetable physiology.

The limits of this paper will prevent giving any detailed statements of some very interesting experiments, touching the facts of evaporation, and must necessarily only admit of but a few of the laws of radiation being explained.

Therefore, while an attempt is made to lay before you some of the wonderful effects of solar energy, there is no desire to claim originality. My object is rather to draw your attention to some of the more recent experiments, made in this field of scientific research, by Mayer, Tyndall, Priestley, Johnstone and others ; and to remark that :

Now and then the mental eye catches a glimpse of the Proteau exhalations of water, and now and then, the shimmer and the gleam of radiant heat. But so little obtrusive are these subtle agents, moisture and heat, so obscure in their transformation into more solid trunk, limb, leaf, flower, and fruit, that one runs an extreme risk of being considered incoherent in such assertion ; and that it should give rise to an expression of wonder, is not so much a matter of surprise, since nothing appears more unlike than that subtle fluid we call aqueous vapour and the solid oak ; or the faint white glimmer of radiant heat and our much-esteemed apples and pears, notwithstanding that these same elements are convertible into such is a rigid truth.

We now possess the means of tracing out the elementary, motive force of heat and moisture in their relations to all vegetable life.

In plants, for instance, certain inorganic compounds—carbonic acid, water, and ammonia are decomposed. The carbon of the carbonic acid, the hydrogen of the water, and the nitrogen of the ammonia are retained as the constituents of the organs of plants, while the oxygen of the carbonic acid and of the water is returned as gas to the air.

Now it is observable, that when buds become developed into leaves, they are brought in contact with those inorganic compounds with which the atmosphere is at times richly freighted, and by a chemical affinity not a whit more mysterious in its operation and results, than that produced by the contact of carbonic acid, water and zinc, which precipitate a white powdery compound, do these same leaves produce a growth of limb, build up a

structure, and develope fruit out of carbonic acid and water, compounds containing carbon and hydrogen, or carbon, and the elements of water; concurrent with this process oxygen is evolved.

But you must bear in mind, the whole or any part of these objects could never be produced, were it not for solar heat, which tears asunder the molecules of the elements of plant structure, and separates them from each other, while chemical affinity stores them up into solid matter for future use.

Feeling, to a great extent, the force of this wonderful convertibility of unwholesome compounds from a condition, which in itself is unable to support animal life, to that which is its only source, I cannot restrain a feeling of gratitude for the permanency of nature's forces, in bringing about an annual cycle, whereby the delicious peach, the fragrant apple, and the aromatized pears, become evolved from carbonic acid and water. Moved by such impulse, we are impelled to say with Wordsworth, "Lo the solid ground of nature, trust the mind that builds for aye."

What an amazing transmutation of form and force solar energy presents to us, by means of our exact methods of investigation, when compared to those of only half a century ago. It is through the instrumentality of these precise ways of arriving at truth, we are brought to learn that, between the entrance and the exit of solar rays, all the multiform beauties of our globe appear.

If we set about, by aid of chemistry, tearing down the organized matters of a tree, we find it composed of fluids and gas, and a mere minimum of its bulk solid matter.

It follows then, that the elements of water constitute a medium, the motion and the play of which require an exact observation in reading the phenomena of vegetable form and fruition.

Let us therefore endeavour to keep our minds on the action of this wonderful solar radiation, and make our observations on the effects produced by it—on the compound we call aqueous vapour; and I think it will be found, that in proportion to the obstruction opposed to radiation, or facilities afforded to its free action, as regulating the amount of water, the essential and absolute success of tree planting depends. It will indicate how high or low the head should be formed, what distances they should be planted apart, the capacity of different kinds of soil for the retention or diffusion of moisture. The correlation existing between the play of heat, soil, and atmosphere, is so intimately related, that I will here endeavour to mention some of the phenomena.

It is well known that the sun's heat passes upwards into space, at least so much of it as does not become fixed by chemical affinity; and this word radiation expresses the emission and diffusion of heat from a luminous or heated body: and since all bodies possess this power of absorption and radiation; such as our trees, soil, crops, grass; with distinct and sensible variation in their capacities; namely, the difference between gravel and sandy soils, stiff clays or porous loams, the spongy and succulent growth, and the more solid fibre of vegetable matters—hence it will not be safe to give direction, without considering these forces. Hitherto a sort of tacit consent to our neighbours' experience may be said to have stepped in to regulate our practice in planting and cultivation, which is quite true, and I may remark that in the absence of any better method, would be quite justifiable. But at the same time, it would lead us repeatedly into serious errors.

M. Becquerel says, that while examining Temperature, and its variations in trees, he discovered that straw envelopes diminished the variation in temperature, and rendered the movement of heat more regular.

It will readily be conceived that the nature and the thickness of the bark, must exert a great influence on the calorific state of trees. Experiments made on trees, show that the principle of equilibrium of temperature between the air and the trees shifts with the lapse of more or less time; and so much the more rapidly, as the variations in the air are less frequent, in winter and autumn, the difference is at a minimum, and in spring and summer, is at a maximum.

The maximum of temperature in the air takes place according to the season between 2 and 3 o'clock, p.m., while in the tree it occurs after sunset. If regard be had to the season, it will be found that it is in summer especially that the maximum is more marked, then it does not occur until about nine o'clock in the evening.

The heat disengaged in the organs and tissues of trees interferes, but very feebly,

with their proper temperature, which is almost wholly of extrinsic derivation. For its principal cause, we must look to solar radiation, and the temperature of the air. Again, the diurnal variations of temperature in the air are easy to determine, since it is the difference between the maximum and minimum of the day. To find this variation in a tree is a matter of difficulty, but we may arrive at it, in at least an approximate manner, by the following means. Observations on temperature were made at Geneva, from 1796 to 1800, at the rising and setting of the sun, and at 2 o'clock, p.m., in the air to the north, and in the interior of a chesnut tree, 24 inches in diameter; the maxima and the minima could be obtained by combining the temperature at 2 o'clock, with that at the rising and setting of the sun, the maximum taking place about or after the setting of the sun, and the minimum at about the time of its rising, the difference obviously gives the variations within the tree. By noting the variations thus obtained in the air and in the tree, it was seen that during the years 1796-7-8 the variations were on a mean more than five times greater in the air than in the tree. In some observations made at the Jardin des Plants from December, 1858, to July, 1859, it was ascertained that the mean of the variations of temperature in the air and in the tree, were 4°.7 greater in the air than in the tree, instead of 5°.89, as was realized at Geneva. The difference depends evidently on the bad conductability of the wood, which does not permit the variations of temperature in the air to be rapidly transmitted into the tree. It is easy to conceive that variations in the air distinctly marked, but of short duration, cannot become appreciable in the tree. These are significant facts bearing on the questions under consideration by this meeting, and in making a practical application of these experiments, it becomes obvious, that close planting, and low-branched heads, in certain localities, where it is essential to secure both heat and moisture, is physiologically indicated.

But on the other hand, it is observable that, in localities the reverse of this, both wide planting, and high-branched trees, will be placed under the most favourable condition.

The leaves and young branches of trees, and the humble plants which cover the meadows, existing under the same conditions as regards warming and cooling, produce the same effects of variation. It is in the limbs of a certain bulk, and in the trunks, therefore, that we must study the influence exerted by the proper temperature of the plant on the ambient temperature. A green stem should be considered in fact, as a body covered with an envelope possessing a great emissive and absorbent power, by virtue of which its temperature is lowered or elevated incessantly, through the effects of the radiation into space, or of the solar radiation.

But when the parenchymatous tissue is replaced by a cortical tissue, the lignum which is beneath, being humid, and a worse conductor in a transverse than in a longitudinal direction, the movement of heat is there effected very slowly, and brisk changes of temperature are no longer observed in the interior, as in the case of the young branches. From these considerations it will be seen, that the variations, being much less in the stem of a tree of a certain volume, than in the air, if the temperature of the air varies even to a wide extent, but the variations are at the same time of brief duration, the calorific state of the tree is but little affected thereby.

In the contrary case the tree finally assumes an equilibrium of temperature with the air.

Mayer says that, in consequence of the high temperature of the sun, however the atmosphere is highly diathermic to his rays, so that the latter reach the surface of our earth and warm it, the comparatively low temperature of the earth's surface is the cause why the heat cannot easily radiate back through the atmosphere into the universe. The atmosphere acts, therefore, like an envelope, which is easily pierced by the solar rays, but which offers considerable resistance to the radiant heat escaping from our earth. Its action resembles that of a valve, which allows liquid to pass freely in one, but stops the flow in an opposite direction.

The action of the atmosphere is of the greatest importance as regards climate and meteorological processes. It must raise the mean temperature of the earth's surface. After the setting of the sun, in fact in all places where his rays do not reach the surface, the temperature of the earth would soon be as low as that of the universe, if the atmosphere were removed, or if it did not exist.

Thus the configuration of the surface with an atmosphere would retard or facilitate this radiation.

'Tis further noticeable that the amount of density or thinness of aqueous vapour in the air would therefore influence temperature.

Upon these considerations it becomes obvious that our fruit trees, acting under the same laws as forest trees, in drawing off water from the earth, and discharging it into the air, are playing an important part in the economy of heat; they not only obstruct its radiation in this, but present a barrier by their power of absorption, thereby cooling the earth's surface, and facilitating evaporation. Here then exists the most intimate relation between the force of radiation, and the vital forces of our trees. Thus then the question of heat, as affected by a greater or less degree of moisture, must at all times be consulted and fully understood, to attain the best results in planting.

Mr. Brown, of the Geographical Society, thinks that temperature is not so important in the growth of trees as moisture. In this statement he must have quite lost sight of the fact that the movement of moisture is alone directed by heat. "This is the all important element," he remarks, "in the growth of forests." There can be no doubt of the truth of this expression to a certain extent, trees require at least from 15 to 16 inches of rain during the growing season. But it will be found that the relations of the soil to heat are of the utmost importance in producing fertility by radiation of moisture. In the same climate and locality we often find farmers distinguishing between cold and warm soils. The temperature of the soil varies with that of the air, to a certain depth. In summer, the temperature of the soil is higher in the day time, than that of the air. At night the temperature of the surface rapidly falls, especially when the sky is clear, and there are no tree obstructions to radiation. The nature and position of the soil must considerably influence its temperature. In short the warmth of the soil, so far as it favours vegetable growth depends upon the heat of the sun; therefore it is certain that whatever causes retardation of solar radiation back into space, must play an important part in tree growth. This really takes place, to an extent proportional to thick or thin planting, height, or lowness of the head of trees. A further observation establishes the fact that all soils when thoroughly wet, are nearly alike in their power of absorbing and retaining heat. This is due to the fact that the capacity of water for heat is much greater than that of the soil. But since the widest difference prevails in the capacity of different kinds of soil for the retention of moisture, and since evidence has been offered to show that trees modify temperature to an important extent by means of radiation, I cannot avoid the conclusion that this society should avoid recommending a universal plan for planting, training, cultivating, &c., without first qualifying its directions by a statement of the nature of the soil, configuration of surface and the hygrometric condition of the atmosphere as affected by radiation.

It certainly would create confusion if two farmers living within a mile or two of each other, with the conditions above expressed differing widely, were both to pursue a like plan in forming the heads of their trees, planting wide or close, growing crops among their trees, one or the other must experience failure, and it might happen to both.

In conclusion, let me remark that the study of solar energy is of prime importance to the fruit grower. How to regulate and take advantage of its absolute power, as the sole and only force, that builds up and chemically combines the constituents of earth and air into tree and fruit, and let us not forget that, of the numerous wonderful properties of water, the one which it possesses, of discharging the motion of heat upwards into space, cannot be reckoned among the least important.

Professor John Tyndall, in his work on "Heat, considered as a mode of motion," gives expression to some glowing language. Speaking of the sun's energy, he says, "Every tree, plant and flower grows and flourishes by the grace and bounty of the sun: but we cannot stop at vegetable life; for this is the source mediate or immediate of all animal life. In the animal body vegetable substances are brought again into contact with their beloved oxygen, and they burn within us, as a fire burns in a grate. This is the source of all animal power, and the forces in play are the same, in kind, as those which operate in inorganic nature. In the plant the clock is wound up; in the animal it runs down. In the plant the atoms are separated; in the animal they recombine, and as surely as the force which moves a clock's hands is derived from the arm which winds up the clock, so surely is all terrestial power drawn from the sun. He lifts the rivers and the glaciers up to the mountains, and thus the cataract and the avalanche shoot with an energy derived immediately from him. Thunder and lightning are also his transmuted strength, and remember this is not poetry, but rigid,

mechanical truth. He rears, as I have said, the whole vegetable world, and through it the animal. The lilies of the field are his workmanship, the verdure of the meadows and the cattle upon a thousand hills. He forms the muscle, he urges the blood, he builds the brain. He not only grows the cotton, but he spins the fibre and weaves the web. His energy is poured freely into space, but our world is a halting place, where his energy is conditioned. Here the Proteus works his spells The self-same essence takes a million shapes and hues, and finally dissolves into its primitive, and almost formless form. Presented rightly to the mind the discoveries and generalizations of modern science constitute a poem, more sublime than has ever yet been addressed to the intellect and imagination of man. The natural philosopher of to-day may dwell amid conceptions, which beggar those of Milton, so great and grand are they, that in the contemplation of them, a certain force of character is requisite to preserve us from bewilderment All the forces of our globe are generated by a portion of the sun's energy, which does not amount to $\frac{1}{2,300,000,000th}$ of the whole," and so he goes on. But finally concludes by saying that ' the law of conservation rigidly excludes, both creation and annihilation. Waves may change to ripples, and ripples to waves; magnitude may be substituted for number, and number for magnitude. Asteorids may aggregate to suns, suns may resolve themselves into floræ and faunæ; floræ and faunæ melt in air — the flux of power is eternally the same. It rolls in music through the ages, and all terrestrial energy; the manifestations of life, as well as the display of phenomena are but the modulations of its rhythm."

A FEW GENERAL STATEMENTS AND SOME DATA RESPECTING THE CLIMATIC CONDITIONS PREVALENT IN HAMILTON, ONTARIO.

By Archibald Macallum, M.A., Hamilton.

When I gave something of a promise that I would read a paper at a meeting of this Association, I little thought what I was doing. I cannot describe the varieties of peaches that can be gathered from the trees for ten weeks in succession, nor the plums, rich and juicy, that maybe had, fresh from the branch, from early wheat-harvest till the frost has hardened the ground. I am among those who know very little about the thousand varieties of pear that have fruited on this continent. I am, however, a learner—a student in this great school—and it has been my privilege to receive instruction from two able and kind teachers in these matters. To yourself, Mr. President, and to W. H. Mills, Esq., I owe a debt I can never repay, but the only reward you desire is that I go on with my studies. It is plainly to be seen that fruits come in circles, with good, better and best kinds in each. Does not this grand succession of the fruits afford a beautiful illustration of the goodness of our Creator. His power, it seems to me, would be as clearly exhibited if they all ripened at once, not so the attribute to which I have referred

And then I see in all the improvements, vast, unmeasured, though they are, that the grand principle underlying all these operations is the combined effort of man with his Maker. Of himself man cannot make a single blade of grass grow, but by putting his efforts in harmony with the laws of the Universe there seems to be no real limit to his improvements. Of my own efforts I need only say, I have tried to cultivate, and have succeeded far beyond my expectations.

The finest apple has been, I presume, thus produced from the sourest crab; the most lucious pear, peach, or plum, from some primitive type of a very low order. And besides these direct effects, the study and cultivation of nature have, in every age, been highly beneficial in elevating and expanding the mind. The physical affects the moral world—the action of the material on the immaterial, thongh mysterious, is reciprocal, and gives to the study of nature a peculiar charm.

Therefore, treading as it were on the confines of this interesting subject, I could give you only a fragmentary thought or detached idea, and consequently I feel a hesitancy in referring to the topics that come before us, and are so ably discussed from year to year.

But I have prepared three tables on some of the meteorological conditions of the place in which this meeting is held, the good city of Hamilton. I trust the salient points there presented will not be devoid of interest, as so very much depends upon them with

regard to the productions that may be expected from this or any other locality. The relation between the meteorological conditions of a place and the nature of its soil, and the productions thereof, vegetable and animal, are of the most intimate kind.

The importance of accurate information on these matters can hardly be over-estimated. From a paper read lately before the Canadian Institute, by Professor Kingston, it appears that in 1831 the epoch of coldest weather in Toronto was in February, and the temperature for the month was 3½ degrees lower than in January. The epoch of coldest weather has been gradually changing, until in 1858 the temperature in January was 2½ degrees lower than that of February. I entertain the opinion, it may be only a pleasing whim, that all these changes are subject, under fixed law, to a movement I shall denominate a precession, and that by becoming thoroughly acquainted with the laws of these phenomena, we can tell with certainty what kind of a summer we are most likely to have in the season to come, and consequently what preparations should be made to meet or take advantage of its peculiar phase in our treatment of our fruits, flowers, and fancies.

Moreover, questions of the most practical and important complexion interlace themselves with this subject. The rise and fall of our great lakes are dependent on them. At this very time, I am informed, the water in Lake Ontario is seven feet below the ordinary level in its usual conditions.

The latitude of Hamilton is 43° 15 min., its longitude 79° 57 min., or in time 5 hours 20 min. west of Greenwich. The height of the station where the observations were made is, above the lake 90 feet, and above the Atlantic 325 feet.

From the data herewith presented, and from others furnished by Professor Kingston in the "Year Book" for 1870, it appears that Hamilton is the warmest spot in Ontario, I believe in the whole Dominion, unless in the far West. Of all the places mentioned this city shows the highest maximum, the greatest diurnal range, and—taking 1869 and 1870 from June to May, inclusive—the greatest rainfall, though this was far exceeded in the Eastern Provinces.

The first and second tables refer exclusively to Hamilton, and the data are all derived from observations made by myself and extend over a period of six years. Table number three is a comparative one, in which other places appear, its materials have been derived from the source already mentioned.

Table No. I. contains the amount of cloudiness, mean humidity, number of rainy days, duration in hours, depths in inches; number of snowy days, duration in hours, depth in inches; total depth of rain and melted snow; wettest summer month, depth of its rain-fall, driest summer month, its depth of rain-fall; number of days from snow-fall to snow-fall, and the date of each. Ten in the column for cloudiness would indicate the whole sky to be over-cast; 100 in that for humidity, that the air was perfectly saturated with moisture, and so forth with the other items.

Table No. II.—Gives the height of the barometer reduced to 32 of temperature; the highest and lowest cases that occurred with the months of such occurrence; the mean temperature for the year, the range of temperature, the warmest month and its mean temperature; the coldest month and its mean temperature, the warmest and coldest days, with the highest degree in the former and lowest range of temperature in the latter together with the mean temperature of each; and the mean of each subject for the six years.

Table No. III.—Affords a comparative statement, embracing some ten places, of the annual temperature deduced from observations extending over at least three years, the mean annual range; the means of highest temperature; and then the temperature of each season for twelve months beginning with June 1869, and ending with May 1870; and closes with the temperature for these twelve months, and the height of each place above the level of the ocean.

The mean of the daily observations are combined during the month in finding the monthly mean; these, in their turn, are combined for the yearly, and the yearly for the period under review.

TABLE No. I.

YEARS.	Amount of Cloudiness.	Mean Humidity.	Number of Rainy Days.	Duration in Hours.	Depth in Inches.	Number of Snowy Days.	Duration in Hours.	Depth in Inches.	Total Depth of Rain and Melted Snow.	Wettest Summer Month.	Depth in Inches.	Driest Summer Month.	Depth in Inches.	No. of days from snowfall to snowfall.	Last snow fell on	First snow fell on
1871	5·7	75	79	304·30	26·34	36	137·20	52·02	31·56	August.	4.02	July.	1·34	187	1st Ap.	4th Oct.
1870	5·8	78	107	404·05	36·51	48	303·40	121·14	48·62	July.	4·45	April.	1·61	209	5th Ap.	31st Oct.
1869	6·3	77	99	380·13	35·20	48	276·45	85·70	43·78	June.	8·94	May.	2·06	196	13th Ap.	26thOct.
68	6·0	75	89	374·15	25·45	47	256·00	65·77	32·02	May. Sept.	4·21 4·61	July.	0·62	177	23rd Ap.	17thOct.
1867	6·0	76	92	336·30	21·80	65	365·35	94·82	31·29	May.	3·44	June Aug.	0·95 0·89	194	24th Ap.	4th Nov.
1866	5·7	77	117	684·30	34·56	44	222·50	43·97	39·13	July.	5·32	April.	1·29	207	2nd Ap.	26thOct.
Mean	5·9	76	97	414·00	30·00	48	260·25	77·24	37·73	.....	5·83	.....	1·46	195	.....	.....

TABLE No. II.

YEARS.	Height of Barometer corrected to 32°.	Highest Barometer occurred in	Months.	Lowest Barometer occurred in	Months.	Mean Temperature for the Year.	Range.	Warmest Month.	Mean Temperature of the Month.	Coldest Month.	Mean Temperature of the Month.	Warmest Day.	Highest Temperature of it.	Mean Temperature of Warmest Day.	Coldest Day.	Lowest Temperature.	Mean Temperature of Coldest Day.
						°	°		°		°		°	°		°	°
1871	29·6069	30·380	Jany.	28·718	Feby.	46·22	117·00	August.	70·60	Dec.	21·40	4th Aug.	99·00	81·50	21st Dec.	18·00	0·20
1870	29·5978	30·177	Jany.	28·869	Jany.	48·06	110·90	July.	72·10	Feby.	23·14	25th June.	101·80	87·00	29th Dec.	9·90	3·00
1869	29·5971	30·928	Sept.	28·800	June.	47·60	102·70	July.	68·43	March.	25·37	20th Aug.	94·30	80·70	4th Mar.	8·40	9·30
1868	29·6370	30·838	Jany.	28·873	Dec.	44·98	124·80	July.	79·99	Feby.	18·37	14th July.	106·30	88·60	3d Feby.	18·50	2·70
1867	29·6131	30·288	Dec.	28·830	Dec.	46·20	109·70	August.	71·10	Jany.	19·90	24th July.	99·80	82·80	13th Jan. 12th Dec	9·90	5·30 4·80
1866	29·6240	30·938	Jany.	28·895	June.	45·49	115·80	July.	72·47	Jany.	22·80	16th July.	96·30	82·20	8th Jany.	19·50	1·80
Mean	29·6126	30·5865	....	28·831	....	46·09	113·49	.....	72·45	.....	21·83	.....	99·58	83·80	.....	14·03	2·95

TABLE No. III.

	Annual Temperature from observations of three or four years.	Mean Annual Range.	Mean of Highest Temperature.	1869.		1870.		For the year from June, 1869, to May, 1870.	Height above sea-level in Feet.
				Summer.	Autumn.	Winter.	Spring.		
Barrie	43·1	49·7	91·8	64·5	46·7	22·1	43·7	44·3	779
Belleville	43·6	52·9	91·3	64·3	45·9	22·5	43·4	44·0	307
Goderich	43·9	45·0	87·2	62·2	46·2	25·5	43·3	44·2	715
Hamilton	45·6	49·6	99·2	65·5	47·4	26·4	44·1	45·9	325
Pembroke	40·1	58·5	92·3	62·7	44·0	14·9	41·5	40·8	400
Peterborough	42·3	54·2	92·9	64·4	43·9	20·6	43·4	43·1	629
Simcoe	44·8	48·6	92·0	65·5	46·8	26·9	45·9	46·3	716
Stratford	.....	.....	88·7	62·0	43·1	22·8	42·7	42·7	1182
Toronto	44·2	46·2	.....	62·2	45·2	24·9	42·4	43·7	342
Windsor	.....	.....	94·7	67·5	47·3	27·0	47·1	47·2	620
Mean	43·4	50·6	92·2	64·1	45·6	23·4	43·7	44·2	.....

Mr. President, I have very far exceeded the limits, I had assigned to myself in this paper ; and I fear I have trespassed on your time and tried your patience—my apology is the importance of my subject which, however, is far from being exhausted. Were I not afraid I would cause some alarm, I intended to say that with your kind permission I might return on same future occasion to this or some kindred topic, but with special reference to a few of the many important lessons a knowledge of the meteorological laws of our Province is so admirably calculated to afford.

HAMILTON, February, 1872.

FRUIT GROWING IN FRONTENAC.

BY J. A. ALLEN, KINGSTON.

There is hardly any portion of Canada without its peculiar advantages of soil, climate, position, &c., and its lesser or greater countervailing disadvantages ; and if in Kingston and its neighbourhood we possess not the rich soil, milder winters and earlier springs of a large part of the great Western Peninsula, we can yet boast of THE COOLEST, HEALTHIEST, AND MOST ENJOYABLE SUMMER-CLIMATE IN AMERICA. And if our springs be somewhat late, yet when our fruit-trees come into blossom they rarely suffer by after frosts ; and if the winter be severe, yet it is steady, shielding by its snow-mantle our smaller fruits and grasses from the else too penetrating cold, and preventing to a great extent, those alternations of warm weather and hard frosts, so trying to plant life : so that, whilst here in Kingston we grow to great perfection, in the open garden, the Sweetwater Grape, yet in sunny Southern Maryland they fail to do so.

It is true, we can raise the peach only as a wall fruit, and with the aid of winter protection, and can fully ripen, only occasionally, some of the later kinds of grapes, yet are there so many varieties of the most delicious grapes that we can ripen perfectly, that we cease to be discontented.

We are still young, however, in grape-growing in this part of Canada, and only are, a few of us, feeling our way to the best mode of cultivation, and to the selection of varieties

specially suited to our soil and climate, so that whatever we write is not intended as the *dicta* of an experienced master, but rather as the words of one who tenders the best advice which his own limited experience, supplemented by that of able, earnest, thoughtful minds, can suggest.

In Kingston and its vicinity, and in the large islands adjacent, the soil is generally clay —occasionally sandy loam—overlying a Silurian limestone.

Now, I consider *clay*, especially when resting on *limestone*, the best possible foundation-soil for grapes, and these advantages are further increased by the tempering presence of a large body of water. To-day (October 23rd), my Adirondac grape vines are flourishing in almost the verdure and freshness of July, while by reference to my notes, I find that they yielded their first ripe grapes on the 5th of September, though the spring, in this part of Canada, was this year more than usually late.

Of course, in so Northern a climate, earliness in ripening is of the first importance. Accordingly, I have weeded out, and, from time to time, still continue to weed out, some varieties which, good in themselves, do not seem suitable for us. And though I still have about twenty varieties of out-door grapes—some of which are already doomed—yet are there scarcely more than half a dozen of them, which, taking all their circumstances into account, I can recommend for general cultivation *here*, and, even with respect to some of these, I cannot wholly free my mind from all misgivings. Those which, *so far*, I most approve of, are the Adirondac, Sweetwater, Hartford Prolific, Rogers No. IX, (or Lindley,) Salem, (or No. LIII.) Delaware, and though I have not fruited it myself, the Eumelan. The Salem might, *perhaps*, be dispensed with by those who have No. IX.; for I consider it quite equal to the Salem—that delicious hybrid—in flavour; while, so far as my own narrow experience reaches, it surpasses it in productiveness and early maturity. The Concord is a fine and very showy grape, but I fear hardly early enough to be depended on for a general crop, being better suited to a more Southern climate. Still, this year, it ripened perfectly, every cluster. The Ontario, a handsome grape, large in bunch and berry, but inferior in quality, is later still. Roger's IV and XV are, I fear—though I am sorry to think so—also rather late, as is likewise the Iona. Roger's III is early but not earlier than his IX, to which it is decidedly inferior. The Roger's XIX is a fine, large, black grape, ripening about the same time as the Concord. The Isabella is a fine grape in its own climate, but wholly unsuited to ours. The same remark applies to the Catawba. The Perkins, Blood's Black, Joe's Seedling, Miles and Northern Muscadine, I have already rooted out, or am about to do so. The Israella is a grape of fair quality, but, as a table grape, has nothing special to recommend it. The Creveling is a fine flavoured grape, but has a straggling bunch, owing to the fact of its setting badly. It is, too, rather late sometimes.

It seems to me of some importance that grape trellises be made to run north and south. When running east and west the earth on the north side continues damp for days after every shower, a state especially injurious to the grape vine; whereas, when the trellis stretches from north to south the vine itself, and the earth on each side of it, is visited daily by direct sunlight; and I have, I think, learned by experience that, by the observance of so seemingly trivial a circumstance, the ripening process is advanced some days.

I think it likewise important, in vineyard culture, that the land slope towards the south, and that it be thrown up into high ridges of ten or twelve—or twice or thrice that number of—feet wide, and that the vines be planted in the centre of the ridge, five or six feet from each furrow, and that the furrows be free from every impediment. Underground drains with egg-shaped tiles, the small end downwards would be a great additional improvement.

Dryness, light, and warmth seem to be the first conditions of successful grape culture. In rainless (*i.e.* in summer) California and Australia the grape vine unfolds and lifts its foliage in glossy verdure to the sun; and, like the Virginian Creeper, when plants all round are manifesting too sensibly the effects of a long continued drought, seem to exult in conditions so injurious to general vegetable life.

Now, from this circumstance, I augur the probability of success in grape growing in the neighbourhood of Kingston; for, of all parts of Canada, we suffer most here, from want of rain, while, on the other hand, the vicinity of the Lake helps to keep the air charged with in-

visible moisture, which acts as a reflector to return the heat which would else be lost to us in empty space. This vast body of water, heated during the summer by the sun's rays, and often warmer in the autumn than the surrounding air, wards off the frost by radiating its caloric into the colder strata of the air, and then prevents its escape by interposing a screen of itself, in the form of vapour, between the earth and the great heat-hungry void.

In short, could we only command a fortnight of earlier warm weather in the spring, the conditions of grape-growing would be almost perfect here. We grow the Sweetwater grape in clusters of from half a pound to a pound and a half in the open air.

Early in the season it will be well to water the young vine shoots, through the fine rose of a hydronette, with persulphide of lime, or simply to sprinkle them with *sulphur* by by means of a sulphur bellows or other appliance, and to continue to do so throughout the summer, whenever the first symptoms of mildew manifest themselves.

My own practice is to prune my vines in the late autumn about ten days before covering them with earth for the winter. This dries and seals the extremities of the shoots, and thus prevent bleeding, if that be, indeed, injurious, in the spring.

If I desire much wood and foliage, I prune closely; if fruit, I leave longer shoots. In the early summer, as soon as opening buds show their embryo flowers—I break off all but those which I intend retaining for fruit, foliage, and next year's fruit canes. The best system of pruning is, I think, the alternate or the renewal; according to which the cane which bore fruit *last* year is cut off to half an inch above its lowest bud, which bud is suffered to grow *this* year, to its fullest extent, without fruit, whilst a cane which had not borne fruit last year is allowed to bear fruit on *this*; and so on. But I fear that, with out-door grapes, very few observe the rule. I confess that, during the summer, I clip off with a pair of shears, too roughly and indiscriminately for the nicer requirements of science, the redundant foliage; being careful, however, to remove only the weaker growths, and the ends of shoots, but never the older leaves on the bearing canes, or on those intended for next year's fruit. The older leaves ought never to be shut out from the free air and direct sunlight by the too rank growth of newer wood. And I incline to think that the fruit-buds *for next* year's bearing would be improved by shortening the canes and their laterals about the middle of September.

With respect to manuring I cannot speak dogmatically. That all grape vines are benefited by common barnyard manure I cannot affirm; but I can say that the Sweetwater, Delaware, Adirondac and Rogers No. IX, bear well under such treatment. But as the grapevine and its products contain large quantities of potash, lime, phosphoric acid, as well as some magnesia, sulphur, iron, &c., it seems certain these must exist in the soil itself or be supplied through natural or artificial manures—either by products of the stable, &c., or by bones, ashes, gypsum, lime, superphosphate, sulphate of iron, sulphate of magnesia, &c., in at least moderate quantities, and few, I think, who have used these, will repent of having done so. But I am far from affirming that good natural soil does not contain a sufficiency of these for fair or even large crops of grapes, or that some varieties, the Concord for instance, will not give even a better return than when heavily manured from the barnyard.

But I must not quit my subject without urging the farmers and mechanics of Canada to erect, at least, some kind of cheap glass-house for the cultivation of the finer kinds of the foreign grape—the Black Hamburgh, the Muscat Hamburgh, Chasselas Musque, &c. Such a structure, capable of producing the most delicious grapes in great perfection, can, with the farmer's or mechanic's own labour, be erected at the expense of a few dollars. Three cedar posts sunk into the ground to the depth of three feet, and rising above it to the height of six or eight feet, with three shorter posts in front, six, seven or eight feet from these, and two and a half feet over ground, say—so as to give an angle of about forty-five degrees—form the skeleton of the building—twelve feet by seven, eight or nine. This is to be boarded in front, sides and rear, with common rough inch-board, with glass for the roof only. The rafters, into which the glass is to be bedded ought to be about 3 inches deep by 1½ wide, and from eight to eleven feet long, with a door at the end nearest the back, to enable a person to walk erect. In my house, the path is sunk below the bed in which the vines are planted, which are trained on wires a foot or so below the rafters. To such a house there must be attached—in front and facing the south, *south-east* or east—a

raised bed of rich earth, well dug, manured and drained. Sods from an old pasture piled up on one another till rotted, with a moderate quantity of old manure, old lime, some sand and broken bones or bonedust, with a small quantity of wood-ashes, make an excellent bed which, with a little enriching from time to time, will last for years. If such a bed, extending eight feet in front, sixteen wide and eighteen inches inside the front boards, were under-flagged, bricked, concreted, or planked, so much the more perfect. One board fourteen inches wide, on the back of the building and near the glass, hinged on the lower side, to let down readily, will be necessary for giving air, and allowing the escape of heat. A board similarly hung in front might sometimes be found desirable. But I feel nearly certain that if the rear ventilator be left open during the day, from the time that all danger from frost has ceased, till the grapes are ripe, it will be found to be amply sufficient. Of course, after the uncovering of the vines in the spring, the back ventilator must be opened whenever the sun shines, but closed when his rays fall slantingly from the west. Such a house may, of course, be of any length and depth, according to the taste or requirements of the owner. If constructed with a longer rafter, it might have to be strengthened by a strong scantling across the centre, supported by one or more posts. Need I add how greatly such a structure would conduce to the comfort and pleasures of a tasteful family.

Before I close this article, let me suggest that a memorial of some kind being due by the public to Mr. Rogers of Salem, who originated the class of excellent and delicious grapes, which hitherto have borne his name, a small sum of money be contributed by every one who has been so signally benefited by his great achievements in successful hybridization. A few cents contributed by each person would soon amount to a considerable sum. We ought not to forget our benefactors.

I reserve my list of apples and pears, with any remarks respecting them, for a future occasion, intending before I next write to you on the subject of fruits, to observe with my own eyes, in the different districts of Frontenac, the kinds that succeed best throughout the county. I may, however, name, amongst those that are really good and appear quite hardy, the Red Astrachan, St. Lawrence, Fameuse, Northern Spy, and, above all, the Golden Russet, which every year is richly crowned with an abundant harvest of golden fruit.

Amongst Pears I may mention, as favourites, the Flemish Beauty, Louise Bonne, and, though somewhat tender, the Bartlett.

Raspberries seem to me to do best in a rich, damp, and rather shaded soil. Those to which I refer below have, none of them, received the slightest winter protection. Two kinds of white succeed pretty well; occasionally very well. I have never seen them so fine as in black vegetable mould-soil mixed with clay. Doolittle's black cap for early, and the Mammoth cluster, for late crops, have, each of them, with me, borne enormous crops; but last winter cut short and cut down some of the canes, and though I still had a good crop the Robins and some other birds left me very few of them. Growing in such large clusters and so exposed to view, they attract the attention of the whole feathered tribe, who have no conscience about reaping where they have not sown, but consider the "featherless biped," man, a great mistake in creation, and a fair subject for plunder. But, resolved, as far as black raspberries are concerned, that the Statute protected birds shall shift for themselves in the woods amongst the plants of nature's sowing, I have, this autumn, rooted every black raspberry out of my garden. Of red—indeed, of any—raspberries, the "Clarke" is my favourite. Naked before the elements it stood erect all last winter, the severest I ever remember—and came out of the ordeal, as heretofore, full of vigorous life to the very tips, and, this summer, kept on bearing for weeks its large beautiful and delicious fruit. The "Philadelphia," too, is very hardy, and a great bearer; but what compared with the "Clarke," are its small, ill-coloured, poor flavoured berries?

Of Blackberries, for *this* part of Canada, I have no good opinion. I have had the Rochelle and Kittatinny, but though I got some large berries, I never got a fair crop. They, likewise, throw up shoots in every direction, and are somewhat difficult to root out.

With the exceptions of the "Kent," cherries do not appear to succeed in this part of the country. Of plums, as of pears and apples, I purpose writing hereafter; but wish, meanwhile, to call attention to the admirable paper by J. H. Springle, on page 28 of the "Report of Fruit-growers Association," for 1871.

Currants—black, white and red—succeed to perfection here. Amongst the best vari-

eties are the black Naples, red Dutch, and white Grape currants. The Cherry, though yielding large bunches and berries, is too tender.

The gooseberry requires great care, and a rich soil. Mildew is the great difficulty. The Whitesmith is one of the best. I have some now, preserved in spirits, as large as pigeons' eggs.

We have tried several kinds of strawberries here, but I think the general opinion is that, the Wilson and Triomphe de Gand are, all things considered, the best—the Wilson for productiveness and the market : the Triomphe for the size and flavour.

ON PRACTICAL CLIMATOLOGY.

BY P. E. BUCKE, OTTAWA.

"The want of a perfect and simultaneous system of meteorological observations has long been felt by individual observers. The climatology of so vast an extent of territory must surely influence man's present happiness and future destiny ; but a perfect and unbroken cord of observations taken at the same hours has, up to the present time, not been attempted. This cannot be owing to its want of importance, for it has a direct bearing on the health of individuals, on agriculture, and on the wealth and commerce of nations."

The above remarks, written in 1866 by Arthur Harvey, Esq., for the "Year Book" of 1867, are still in force, little or nothing having yet been done by either individuals or agricultural societies to further the science in Canada. Some regrets are also expressed in the Report of the Department of Agriculture of the United States for 1870, just issued, in which the writer, André Poey, late director of the Observatory at Havana, says :—"A division of meteorology should be established in connection with the Department of Agriculture." This gentleman, in a very able and practical article, gives much useful information in a condensed form, with excellent suggestions for future observations, and regrets that although stations are established for observations under the direction of the War Department, these observations will only have a partial and indirect bearing on agriculture.

The observatories of Quebec, Montreal, and Toronto, give the state of the barometer, thermometer, rainfall, and direction of the wind, daily throughout the year, and in some other countries these observations are carried on with much more detail than here. In England, for instance, by walking into the Exchange in Liverpool, you may see the direction of the wind, the state of the weather—if cloudy, sunshine, or rainy—at fifty different points in the United Kingdom and on the continent of Europe, all telegraphed up to the latest moment. These observations are of great utility with regard to shipping and commerce ; but in a country like this, where the climate varies in every degree of latitude as well as longitude, it would be of the utmost importance to agriculture if some means could be taken to have an accurate register at least of the thermometer at all inhabited points, at distances of not more than fifty or sixty miles apart, and also of the rain and snow fall, with the date and depth of the first three falls of snow, and the number of days it covers the ground during winter. At present the only practical idea of the climatology of this country with regard to fruit culture is to be gained by carefully watching the birds which inhabit the various sections of the Province, and the date of their appearance and departure.

The writer having lived for many years near London, Ont., has noticed that many kinds of birds found there in great abundance are never met with in this vicinity (Ottawa) by any chance. Amongst these I may mention the quail, the meadow-lark *(Sturnus ludovicianus)*, and the bluebird *(Sylvia sialus)*. I am unable to account for the reason why the two latter do not reach this section, being birds of passage, and our summers are as genial as those further west ; but I suppose the food they prefer is not found here in sufficient quantity to entice them to our more northern region. Perhaps some of our naturalists could throw light on this subject, and I for one should take it as a great favour if the cause was made known. The insect life required for the bluebird, who feeds principlly on Coleoptera caterpillars, spiders, and other insects, and ripe fruits in their sea-

son, may be extinguished by the rigour of our winters, and the small amount of cereals grown here may possibly be the reason for the non-appearance of the meadow-lark.

I am not surprised at the absence of the quail, because even as far west as the township of Warwick—thirty miles west of the city of London—these birds are frequently decimated by being smothered in the drifts which form along the snake fences. Here, where the snow lies for three months and a half on the ground every winter with the greatest regularity, they could not possibly obtain sufficient food to support life.

Prairie fowl are sometimes shot as far east as Walpole Island, on the St. Clair River, but in no other part of Canada. Again, ptarmigan, I believe, are not found to the west of Quebec. Chipmonks and red squirrels, which lay up stores for the winter, are found here in great numbers; but the black squirrel, who obtains his food from day to day in the woods, is never met with, although exceedingly plentiful in the western part of this Province, where acorns and beech-nuts, upon which he principally lives, are found in great abundance. This fact shows that our snows are too deep, and the time of their remaining on the ground of too long duration, for him to gain a livelihood. It is also found that, although we have sufficient summer heat to ripen the peach and the grape, and, I have no doubt, the fig also, our winters are so severe that, without some mode of artificial protection, these varieties of the vegetable kingdom cannot support life through it. The Lawton blackberry has not yet been successfully established, and some other plants require unusual care to keep them from being killed by frost. The apple, also, from some cause, has become a partial failure, and orchards, which are seen on nearly every farm from Bowmanville to Windsor, are rarely met with in this neighbourhood, although apples are successfully grown upon the Island of Montreal. I am not yet fully prepared to say that this is the fault of frost. I am more inclined to think that sufficient care is not bestowed upon the trees, and that they become a prey to borers and other insects; but I intend giving this subject my best attention. Although the climatic changes range from 96 degrees in the shade in summer to 40 degrees below zero in winter, and are destructive to many of the finer fruits, I am still in hopes the apple, our greatest stand-by, may yet be grown in reasonable abundance.

It does not appear that we are freed from the insect pests which prey upon the fruits of the west on account of our long cold winters. It is true we had not the Colorado potato beetle last summer, but we expect him next. We had three days and four nights last winter during which the thermometer did not at any time rise above 7 degrees below zero, and the lowest touched during that period was 37 degrees below zero. I thought this would have touched the currant-worm or saw-fly, but he appeared rather to like it, although the exceptionally cold spring made him hatch out later than usual. When he did appear, he was very persistent in his attacks, and required looking after until the end of August.

I believe, as a rule, we have more inches of frost in the ground than is found about Quebec. This is owing to the snow falling earlier there, which keeps the soil from freezing, and digging may sometimes be performed, after clearing away the snow, in the middle of winter. Some interesting experiments might be made by burying potatoes at various points in similar soils at different depths, and watching in the spring to observe the lightest covering of soil that would protect them sufficiently to enable them to sprout. Such experiments as these require co-operation throughout the Provinces.

I am now trying some experiments with the peach, the tenderest of our fruits. I have about twenty seedlings this year from the stone. I have taken up most of them, cut off the tap roots, and pruned the tops pretty severely, and laid them in a trench. In the spring I shall plant out, leading the roots in two opposite directions from the stem. Next autumn, by digging away the earth at the two sides, where no roots are planted, I expect to be able to throw the young trees over on their sides into trenches, and bury them up, having first gathered the branches close along the stem. But I do not intend to let my experiments at defeating Jack Frost rest here; I propose also growing some on the "souch," cutting off the tree a foot from the ground, and burying the branches which radiate therefrom during winter; and my third plan is to grow on the French cordon system, leading two branches eight inches from the ground along a wire. These arms may also be covered with earth, leaves, or some other protection. I am looking forward with no little interest to the report of the Fruit Growers' Association on the Eumelan

grape, which has been distributed over the greater part of Canada; here it was killed down to the snow line where unprotected. This report will give the best essay we have yet had in this country on practical climatology.

One of the main objects of climatology to the farmer, the gardener, and to the fruit-grower, is the knowledge of what fruits, grains, and vegetables may be grown with profit in a certain locality, without the trouble and loss of planting a large quantity of some valuable tree or plant, and having them destroyed by frost, heat, or wet, or some change of weather or temperature. A knowledge of this nature in the Ottawa valley would be of the greatest utility, as it is the most unfortunate place I know of with regard to its supply of fruits. There had been little or nothing done here in the way of putting out fruit trees—or if there had, they (the trees) had not succeeded—until a few years ago, when an agent came from a Rochester nursery, and a new state of things is now beginning to dawn upon us; but we are still groping in the dark, as we do not know what to plant, having to test almost everything. The agent mentioned made such a good thing of his visit, that he now regularly comes to this city two and three times a year, taking orders, supplying, and having sales; but I am informed that he is to have a rival in the shape of some nurserymen brothers, named Bailey, from Lyn or Kingston, who are going to establish themselves here in the spring. This is much desired, as plants raised on the spot, or even brought from the frontier, are more hardy than those coming from so far south as New York State. Another American agent met me a few days ago, and asked what fruits would stand this northern climate. I told him plainly that I did not know, that it depended much on the care given after planting, and a good many other things. I knew of one gentleman who had a few pears, some green gage plums, and two or three varieties of apples; another who had several trees of Fameuse; that there were also a good many varieties of grapes grown, but most of the people who had tried the finer sorts of apples and plums had failed, but from what cause I was unable to say; for, although intelligent men, when asked the cause of their failure, they were unable to give a satisfactory answer, but principally laid the fault on the climate and the borers. There are some fruits, however, that no one fails in here who cultivates them well, and this list comprises the red, white, and black currant, the American seedling gooseberry, the strawberry, the black raspberry, the crab of all kinds, and the early varieties of grapes, if the frost does not take them before ripe in the autumn. He told me he had supplied several parties with trees to test, so that he might introduce them at some future day.

I regret to say that a blight has been observed the last two years on the Transcendent Crab. It strikes the top boughs, and appears to spread downwards. It affects, as far as I have noticed, only the oldest trees; it begins to show itself at the time the fruit is about half grown, when the leaves die and the fruit shrivels. Several of my acquaintances have asked me what it is caused by, and the remedy; but I neither know the one or the other. I have advised sawing off the limbs below the part injured, but do not know if this advice has been followed, or if it has proved a check to the disease. I fancy it must be like the blight on the pears I see so much about in agricultural papers. Who can tell the cause and the cure? My trees are yet too young for it to show itself. The red and white raspberry do well when bent down, and a weight in the shape of a slab laid on them to keep the tips below the snow. Brinckle's orange stands remarkably well protected in this way, but the Philadelphia is perhaps the hardiest of the red kinds, although all do well if bent down as before stated. All the varieties of grapes require winter protection, and the best and easiest to apply is earth. This substance and snow are found to equalize climate most effectually if applied properly, and anything that can be thus protected may be grown here, if it will only ripen its wood and fruit in our short seasons.

It will be noticed that the effect of climate on plants is chiefly regulated by *temperature* and *moisture*, the amount of sun-heat and rain-fall during the *growing* season; if the plants can be kept dormant and sufficiently warm to preserve life, the rest given during winter only gives renewed and active vigour on the outbreak of spring. By actual thermometrical test, we have more sun-heat in Canada than they have in the southern parts of France, hence we ought to be able to raise here all the sub-tropical fruits if safe winter protection could be given—the true test of climatal adaptation being the ability of the plant to ripen its seeds and its young wood. Latitude does not always in-

dicate temperature, and for this reason this arbitrary rule has been modified by lines called isothermal; these are drawn through points whose temperature gives the same average heat throughout the year. By looking at a chart of the temperature of the earth's surface, it will be observed that the line of perpetual frozen ground stretches across this chart in a very irregular manner, and that the part *nearest the Equator* touches the continent of America at Labrador, north of Belle Isle Straits, and from thence runs parallel to the Equator nearly as far as Quebec; it then bends gradually upwards, and on the Pacific coast it is 20 degrees, or 1,200 miles, further north than it is on the Labrador coast. Temperature is also regulated by hypsometrical or altitudinal height, as in the case of mountainous regions; but with this we have little to do in Canada, as our surface is generally flat. But lest any of my readers should have a boulder of unusual size in his town lot, perhaps it may not be uninteresting to state that a height of from 300 to 400 feet, it is estimated, makes a difference of 1° Fahrenheit. The yearly isotherm of 50° Fahrenheit passes through latitude 42° 30′ in the east of America, 51° 30′ in England, 47° 30′ in Hungary, and 40° in Eastern Asia. It will therefore not be difficult to perceive that places having the same *mean* temperature may have a very cold winter and a very warm summer, as we have in the Ottawa valley, greater extremes being felt here than in any part of this Province; but by warding off the cold of winter by protection, and taking advantage of the great summer heat, fruits may be grown here that are cultivated in a much warmer latitude, because an artificial isotherm is thus formed. By actual experiments made in Scotland, it was found that the frost there seldom or never penetrated further than one foot into the ground, and that the mean temperature, after striking off the decimals at that depth for the succeeding months of one year, beginning with January, was 33°, 33°, 35°, 39°, 44°, 51°, 54°, 50°, 51°, 47°, 40°, and 35°. At the depth of two feet the thermometer stood the same for months at a time, and at eight feet deep the lowest marked during the year was 42°, and the highest 50°.

Some plants require a long winter of repose, and a short, hot summer; others require a dry season, followed by a wet one; whilst others again do best in a moderate temperate climate throughout the year; but it is absolutely necessary in determining the limits of the various products of the vegetable kingdom, to know the mean monthly and the mean daily temperature whilst vegetation is active, and to determine this it is necessary to know the number of days required by a plant to produce its leaves, flowers and fruits, and to estimate the mean temperature during that period.

The furthest north that vegetables are grown for food is at Hammerfest, lat. 71°; there potatoes, turnips, carrots and cabbage, succeed.

I notice in the horticultural department of *The Globe*, of the 2nd of February, speaking of the Lawver apple, the statement that "It also blooms late, and thus escapes *spring frosts;* if the tree be sufficiently hardy to endure the winter of our northern localities, this habit of blooming late will be of very decided advantage." I must inform the author of this paragraph that we have no late or "June frosts," as they are termed in the west, in this "northern locality," so that his remarks do not apply here.

OVERSTOCKING THE FRUIT MARKET.

PAPER READ BEFORE THE FRUIT GROWERS' ASSOCIATION, BY A. M. SMITH, ESQ. LOCKPORT, N. Y.

"Is there any danger of overstocking the fruit market, or planting too many fruit trees?" is a question that is now being asked by many of our farmers and fruit growers. I recollect that twenty years ago, when a resident of Western New York, this same question was agitated there. Apples at that time were worth from 75 cents to $1 per barrel, pears from $2 to $3, and farmers thought they paid well at that; but some argued that if we all planted out fruit the market would be overstocked, and they would not be worth gathering. Others thought differently, and planted largely; and what has been the result? There is now ten times the amount of fruit grown there that was grown then, and the price has more than doubled, and the demand is constantly on the increase. The

apple crop the past year in Niagara County (mostly grown in the northern part, in a territory no larger than the County of Lincoln), amounted, according to a report made at the Fruit Growers' Association of Western New York, to 300,000 barrels, at a net valuation of at least $600,000; and the pears, peaches, and small fruits grown on the same territory would amount to at least $150,000 more, making the income to the county for fruit alone at least three-quarters of a million of dollars, and the apple crop has been considered a light one. Sixteen years ago I consulted some of the leading farmers of Grimsby in reference to starting a nursery there, asking whether they thought it would pay or not, but received no encouragement whatever. Some said they might want a few trees to fill up vacancies in their orchards, but they did not think it would pay—there was as much fruit raised now as could be sold; and when I concluded to start on a small scale, and planted out five or six thousand trees, one old gentleman, a friend of mine, made the remark, "The boy must be crazy, he never will sell all of those trees in the world." Barrelling and shipping apples was a thing almost unknown there then; but a few years later, when buyers came in and paid good prices for fruit, people began to plant out, and the past year there have been over 3,000 barrels of apples shipped from there, worth $6,000, and peaches, pears, and other fruits to amount to nearly as much more, to say nothing of the grapes made into wine, and from thirty to forty thousand cans of fruit put up at the Grimsby Canning Factory, and all of this grown within a territory of three miles square. I doubt if there was that amount shipped out of the Niagara district sixteen years ago. But we are asked what guarantee we have that in the future the demand will keep pace with the supply? If we have not a guarantee, we have indications that it will in several ways. We have one in the increase of the home demand for fruit, even to a greater extent than the increase of the population of our towns and cities. This is owing to the fact that people are becoming better acquainted with the nutritive and healthful properties of fruit, especially those who have emigrated here from parts where fruit is scarce, and used more as a luxury than a common article of diet. We have others in the settling-up of places in our own country, and in the neighbouring States where fruit will not grow to any extent; in the opening up of railroads and the increased facilities for transportation of fruits to different points; in the increase of the foreign demand; and in the improved quality of the fruit, particularly of our apples, which I think I may safely say can not be excelled, taking keeping qualities and everything into consideration, in the world. The apples of Western New York, particularly of Niagara and other counties bordering on Lake Ontario, have acquired the reputation of being the best keepers in the eastern markets, and generally command at least a dollar more per barrel than apples, even of the same varieties, raised either south or west. But I see no reason why the fruit on this side of the river, subject to the same climatic influences, should not be equally good; and it has been even acknowledged by some very extensive dealers to be superior. Five years ago, Curtis and Co., of Boston, bought a good many apples in the vicinity of Grimsby, and at the same time were buying extensively in Western New York, and Mr. Curtis informed me that the finest fruit he got that season grew between the mountain and lake in that section. Last fall I sold to a firm in New York 1,300 barrels of apples that I bought in the township of Stamford, near Niagara Falls. This firm also bought a good many at Lockport and other places in Western New York—and after they were inspected by one of the firm, I received the following compliment to Canadian apples:—"I am much pleased with the apples bought by you, and would not exchange them for any other 1,300 between Niagara River and New York City." I thought it was a pretty good one, seeing that there was at that time over half a million barrels between the two points. There may be a danger of overstocking the markets with some of our small fruits. I have known instances of it in some places on the other side, but I do not apprehend anything of the kind here, particularly in the neighbourhood of any of our large towns, or the Grimsby Canning Factory. And here I believe is another indication of the increased demand for fruits: in the various new ways of preserving them—canning, drying, and the retarding processes, which are practised in a great many places in the United States, and which will, I am confident, ere long, be adopted on a large scale here. Of peaches and pears, and the finer varieties of cherries, I think there is no danger of overstocking the market: for the colder portions of our country, where they will not grow, are able to consume all the surplus

that can be grown in the favoured localities where they do succeed, but there is more care needed in the selection of varieties of fruit. It is a lamentable fact that one half of the apples grown in Canada are varieties that are worth very little, only for cider. Farmers have taken very little pains to inform themselves in regard to the varieties best adapted for marketing and to the climate, and there are thousands of orchards of natural fruit, which, if they had been grafted to the right kinds, would now be yielding thousands of dollars to their owners. But I am glad to see that they are beginning to wake up to the importance of this subject, and I believe the day is not far distant when Western Ontario will become what it should be—one of the best fruit-producing sections of the world.

ATTEMPTS AT FRUIT RAISING IN THE BACKWOODS.

BY JOHN WATSON, BIRKHALL.

Having some time ago promised the Secretary of the F. G. Association to write something about my failures and successes as a backwoods farmer at fruit growing, I do so with a very great degree of diffidence, and more with the desire to fulfil that promise, than supposing that I can write anything to interest, far less to instruct, others, inasmuch as my experience in that line only extends over a period of eight or nine years.

Allow me to premise my remarks by stating that Bear Creek, on the banks of which I am settled, in the Township of Moore, like the stream described in the "Cottagers of Glenburnie," has a trick of running out of the straight line, and delights in forming oxbows, angles, and corners, in its tortuous course through the Townships of Warwick, Enniskillin, Moore, and Sombra. Before the discovery and development of the oil business in Enniskillen, the fertility of its flats was such that twenty and thirty successive crops have been raised without the assistance of any other manure than the alluvial deposits left each spring by floods. Its waters have now become so much impregnated with the refuse from the oil refineries of Petrolia, and other deleterious matters, that anything of a vegetable or animal nature cannot live and thrive well that is much in contact with them, which almost renders the flats useless for cultivation. Doubts being entertained whether any real remedy can be devised for this much-felt grievance, it may be a question worthy of consideration whether settlers could not in some measure compensate for this drawback by taking advantage of its cultivateable slopes and banks for fruit growing. These banks generally follow the zig-zag course of the stream, and furnish almost any exposure that may be desired for fruit trees.

The luxuriance with which vegetation flourishes in its vicinity, and the success that has attended the efforts of some settlers who devoted a little attention to horticulture, afford good grounds for supposing that fruit may be profitably raised at Bear Creek, notwithstanding the blossoms being sometimes blighted by spring and summer frosts.

Improvements in any branch of industry being usually brought about by experiments, often accompanied by failures, I beg to give a few facts respecting my attempts at fruit growing in this section.

In the fall of 1863, I settled on a bush lot. The soil a stiff clay. A small tributary of Bear Creek runs through the centre, affording excellent facilities for draining. A space was chopped and cleared for a house on the banks. The next undertaking, after the erection of the log house, was to plant some fruit trees.

The declivity of the banks was sufficient to prevent the retention of much stagnant water in the soil; but, to prevent the possibility of any remaining about the trees, large holes were dug, and some oak stave hearts put in the bottoms, with an eye at the lowest side for the escape of water, should any accumulate.

The idea of planting fruit trees among roots, stumps, logs, and log piles, was laughed at as utopian by some of my neighbours. It, however, required no great knowledge of agricultural chemistry and vegetable physiology, to perceive that the ingredients essential for plant food were in abundance. The large quantities of leaves decaying and decayed, showed a sufficiency of organic matter for some years to come; whilst the piles of ashes, from the trunks of the giant elm, beach, and maple trees that occupied the ground for

centuries as a previous crop, were enough to satisfy the desires of the most fastidious arboriculturist in favour of alkaline manures.

Apple and plum trees were carefully planted, and grew beautifully. The apple trees will now compare favourably with any in the neighbourhood, planted at the same time Taking into account our short springs and the large amount of work to be performed, possibly the fall is the more convenient season for farmers to plant trees. The trees are established and ready to start into growth as soon as the two great agents of vegetation, heat and moisture, are sufficient in the soil.

The Red Astrachans, Golden Russets, and Baldwins bore well in 1870, and the Fall Pippins and Duchess of Oldenburg, or a tree resembling the latter, last year. Fruit, both in size and flavour, all that could be desired.

The Northern Spys and Winter Greenings are thrifty, but the former throw out such a profusion of top growth every year as to require the constant use of the pruning knife to keep the centres open.

Although one tree bore a few last year, I am inclined to believe that the new settler that plants an orchard of Spys must console himself with the poet's advice, and "learn to labour and to wait" for fruit. If it be true that vigilance is the price of liberty, not less true is it that crops of good fruit can only be secured by constant watchfulness on the part of the fruit grower.

Two years ago the borers got into the Red Astrachans. Not willing to disfigure the trees by cutting the invaders out, I resolved to try other remedies. A writer on the subject recommended the stopping up of the holes by which they entered with sulphur. To make security doubly secure, I mixed the sulphur with lard and phosphorus, and closed the holes behind them.

To all appearance the depredators were now as securely shut in as Bazaine was in Metz by the Prussians. Alas for the best laid schemes! Sulphur and phosphorus had no more effect on chrysobothris femorata than Port wine and water on an opium eater. As soon as they finished their engineering operations by boring and tunnelling in the heart of the trees, they made their exit by a more direct route than they entered, as if they used the phosphorus to light their way.

The trees kept growing, and are recovering, but had to be propped for fear of high winds. Last year the Russets were attacked. Instead of trusting to nostrums, the borers were unceremoniously dug out with a sharp pointed knife.

As working and waiting are man's duty, and thrifty toil the one condition of true thriving, a little well-directed labour, if it will not prevent the attacks of these pests, will in some measure make them less frequent. The lye from a few barrels of wood ashes, mixed with some soft soap, will be sufficient to wash a good many trees two or three times in a season.

Plum trees were planted, in the same manner as the apples, in the face of a bank with an eastern exposure. They grew from two to four feet each year. After three or four years, symptoms of decay appeared in one after the other, until all died. Some died on one side, others all round; whilst the bark on others died in spiral stripes, like the thread of an augur. It appeared as if the sap in early spring were started by the warm sun shining full upon them in the forenoon, and sharp frosts succeeding at night, froze the sap at or near the surface of the ground. The trees when broken were black in the heart. Some of the plants were suckers taken from the roots of other trees, others were not; and whether this had anything to do with their early decay I know not.

In backward seasons, I have noticed in exposed situations in the elevated districts of Aberdeenshire, Scotland, where alone the hardy Scotch fur and the birch can brave the height and the cold, sap frozen as described. In the case of the pines, small protuberances were formed round the trees at the parts frozen, and the sap exuded through the bark adhering to the outside in the shape of resin. These trees appeared stunted in growth afterwards, but they had stamina enough to struggle for life; whereas the plums, forced, it may be, too much in summer, succumbed to the sudden changes of temperature.

A yellow Siberian crab tree, which was planted in the same bank four years ago, and probably stimulated too much by the droppings of fowls applied once or twice, grew admirably, and bore fruit the last two years. Early last harvest, the leaves began to fade

and fall off. On examination, the bark was found dead under the surface of the ground. It was scraped off, and the part rolled in a mixture of cow manure and clay. Should it die this year, which is very likely, it is another lesson that trees may be killed by kindness as well as by neglect.

Peaches were, at one time, grown in great quantities in this settlement; but, of late years, few can be raised, and little attention is paid to the cultivation of them in consequence. There is no evidence to show that the failure is occasioned by the change of the seasons, and must be accounted for in some other way.

EXPERIMENTS IN HYBRIDIZING.

BY W. SAUNDERS, LONDON, ONTARIO.

The term hybridizing in its proper signification is usually restricted in its application to the crossing of distinct species, but it has been customary when speaking of fruit-bearing trees and plants to use this term in a wider sense, embracing sometimes crosses between varieties of the same species as well as those of dissimilar ones, and in this way I shall feel at liberty to use it throughout this paper without further remark.

Preparation and Precautions.

Since the results of hybridizing depend so much on the care taken in conducting the operation, I shall detail here the precautions I have adopted throughout these experiments. The flower buds to be worked on having been selected, all those which show any sign of bursting are rejected as well as such as are not sufficiently developed, aiming always to get as many flower buds as possible, which are so far matured as to be nearly ready to open. Being provided with a pair of fine pointed forceps, a few camel hair pencils, and some paper bags large enough to enclose the branches on which the blossoms about to be worked are situated, everything is ready. With the fine forceps the envelopes of the flower—the calyx and corolla—are to be carefully removed without bruising the internal organs, when the sexual parts the stamens and pistil or pistils will be exposed to view; the stamens or male organs are next torn away, leaving the female organs free from all surroundings. Having operated on all that may have been selected in the bunch in this way, the whole is at once tied up in a paper bag, thus preventing the possibility of any insects visiting it afterwards, or any extraneous pollen being carried to it by the agency of winds.

The probability of insects visiting any flowers which have been deprived of their calyx and corolla is not very great, as these parts seem necessary to attract their attention. I have several times prepared bunches of raspberry flowers in this way and watched them to see if insects would visit such, and have never seen them doing so, or ever found any of the flowers so exposed to be impregnated. It is well, however, to take every precaution to gain the results aimed at and this measure should never be neglected.

Collecting and applying the Pollen.

The pollen or fertilizing powder is now to be collected from the variety you wish to impregnate with, and brought and applied to the pistils enclosed within the paper bag, with some fruits this is much easier done than with others, as the pollen is more abundant. The blossoms of the grape for example yield it very plentifully, so much so that a slight jar given to a vine in bloom will cause the fertilizing dust to arise like a small cloud from every bunch of blossom. In the morning just as soon as the dew is off the foliage, provided the day is fine and warm, is the best time for collecting the pollen as it is then that the most abundant supply is to be obtained; and it is wisely arranged that it should be so. Any one who has paid much attention to insects will know that the great bulk of the day flying species are most incessantly active during this period of the day, and they are the great agents employed by nature in effecting fertilization; for passing as they do from flower to flower to gather the sweets there contained they knock the anthers containing the pollen about the stigma and un-

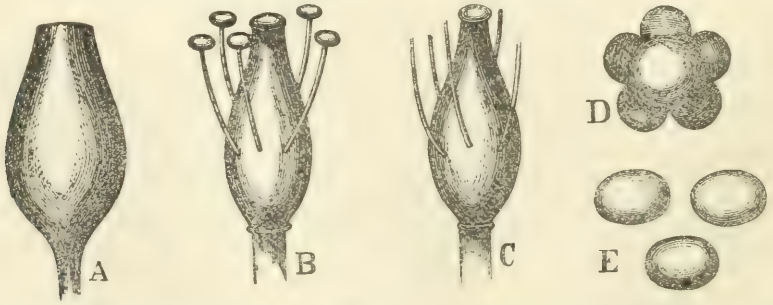
consciously gather other portions of the fertilizing dust about their legs and wings and carry it from one flower to another. The amount of fruit set every season largely depends on the character of the weather at the time of blossoming ; if it be fine and warm so that insects can be active, the probabilities of a good crop are much greater than if the weather be cold and damp.

Pollen may be collected from the grape blossoms by holding under the bunches, a piece of blue paper, and by a sharp tap with the finger jarring that portion of the branch, when a fine cloud of pollen dust will be liberated, and gradually settle on the paper below. The caps of the flowers will also fall plentifully at the same time, and will require to be carefully removed when the fine yellow powder may be distinctly seen on the blue paper. By repeating the operation a few times on different blossom bunches the quantity may be much increased and enough collected to transfer to a small tube or phial in which it may be preserved for future use ; or it may be folded up in the blue paper in which it is collected, due care being taken to label the pollen of the different varieties. Pollen may also be collected directly from the flowers with a camel hair pencil slightly moistened, the pollen dust adheres readily to the moistened surface which is soon coloured with it ; this requires to be transferred to the flowers it is intended to influence without much delay, otherwise as the moisture on the brush dries, much of the material will fall from it and cannot be recovered. I have also found the fingers very useful in this way ; there is usually enough moisture on the skin to detach the pollen masses from the flowers and secure their adhesion, and thus small quantities may be more readily seen and conveyed than in any other manner I know of. These two latter methods are applicable also to the flowers of the apple, pear, plum, cherry, strawberry and gooseberry where the pollen could not easily be collected by the jarring process.

In some cases such as the raspberry and blackberry, I have found it better to break off the expanded flowers, instead of gathering the pollen ; and having removed the outer envelopes and also the central female organs, carry the mutilated flowers, on which the fringe of male organs alone remains, and twirl those organs about among the many pistils in the previously prepared flowers ; this method may also be adopted with the fruits last named.

The proper time for applying the pollen will depend chiefly on the maturity of the flowers. If they were nearly matured at the time the envelopes were removed, the pollen may be applied the same day, or the day following the aspect of the weather and the convenience of the operator being his guide. Pollen grains retain their activity for a considerable length of time; so, if the weather is threatening or if there is a likelihood of other engagements preventing its use the following day, the first application may be made at once, and repeated in two or three days afterwards ; this second application increases the chances of success and should not be neglected. In no case should the flowers be left for a moment uncovered unless under the eye of the operator, and should he have to go for a second supply of pollen, the covering bags should be used during his absence, otherwise some wandering insect may perchance alight on the prepared blossoms, and carry to it the pollen from some other flower and thus vitiate all his results.

For the benefit of those who may have given no attention to the study of the organs of the flower, I cannot do better here than reproduce a figure which appeared in the report of last year, as illustrating the hybridizing of the grape, and subjoin an explanatory paragraph, which will, I trust, enable all to understand the matter clearly.



"In the accompanying figure, A. represents one of the unopened flowers of the grape on an enlarged scale. As this approaches maturity its covering is gradually ruptured and turns

a little upwards, and in a short time the cap is raised until it sits loosely over the tops of the stamens, and then soon falls to the ground, appearing as represented at D, when the stamens, released from the bond which kept them together, separate with an elastic spring and appear as shown at B. The body of B is the female organ and is called the pistil, the lower portion is named the ovary, and contains the ovules or immature seeds, while the summit or crowning top is called the stigma. The stamens, five in number springing from and surrounding the pistil, are the male organs, the knobs on their tops are called anthers, and contain the fertilizing pollen. This pollen when mature causes the anthers to open, and their contents consisting of almost innumerable grains are shed gradually. The pollen grains are shown at E, immensely magnified. When the stigma is fit for fertilization it exudes a gummy fluid to which the pollen grains readily adhere, and the stamens with their anthers so encircle it, that no matter how the flower may be situated on the bunch, one or more of the anthers will be found directly over it, so that it can scarcely fail to become fertilized, when pollen grains are continually falling from above and around it, and while insects are ever busy in travelling from flower to flower, and knocking the anthers about the stigma with their legs and wings. After the pollen grain has become attached to the stigma it begins to absorb some of the moisture it finds there, and a process of growth or germination begins, when the pollen sends out a minute fibre or thread which penetrates the substance of the stigma, and then goes on lengthening downwards until it reaches the embryo seed contained in the ovarian cavity, which it enters and fertilizes."

Paper bags are recommended for covering the flowers which have been prepared for artificial impregnation, on account of the closeness of texture of the material of which they are made, for the pollen grains, which are sometimes blown about by the wind, are so exceedingly minute that they would pass readily through the meshes of the finest muslin. Hence paper bags should be used until the fruit has set, and is thus beyond the possibility of further influence, and then the close paper bag should be replaced by one of coarse muslin, which will freely admit the light and air, so essential to the healthy growth of the fruit.

For five years past, I have been working more or less in this interesting field, and have experienced some successes and many failures. I now propose to detail these operations, beginning with 1868, and ending with 1872, taking the different fruits in order separately. In reference to the work done in 1868, I would say, that during that season I did not use the paper bags, but used those made of muslin from the first, believing that there was not much danger from outside influences, through the medium of the atmosphere, and provision was thus made only against the interference of insects. That season I was visited by my esteemed friend, Mr. W. H. Mills, of Hamilton, who I found had been working for a year or two previous, very carefully, in this same department, and he suggested to me the use of paper bags, which, since that time, I have invariably employed. Knowing that this omission on my part would cast a doubt over the results of my operations for that year, I was anxious, if possible, to estimate the probabilities of fertilization from the agency of the atmosphere alone, and for this purpose instituted the following experiment:—Two bunches of Concord blossoms were selected and prepared, by removing their envelopes and male organs, and each was enclosed in a coarse muslin bag. One of these was situated only about three or four inches from another bunch in full blossom, yet it failed to set a single berry. The second bunch occupied a position just under several bunches of expanded flowers, and was thus most favourably placed to receive influence from the descending pollen. This bunch was divided into two portions, the shoulders forming one part, the tip the other, the intermediate flower buds being removed; the tip which was furthest from the other flower bunches was artificially fertilized by pollen from *Lady Downs*, and set nine berries; the under part of the shoulders failed to set anything, and on the upper part, almost immediately under the other blossoms, there were only three berries set. As I had made it a rule to select the flower bunches operated on, so as to have them as far away as possible from others, I was satisfied from the results of this experiment that there was not much probability that my hybrid seeds for that year had been at all influenced by pollen conveyed through the atmosphere.

The Gooseberry.

In 1868 the following crosses were made:—

1. Houghton's Seedling *female* with Warrington *male;* six berries matured, the seeds from which produced nineteen plants the following spring.

2. Houghton's Seedling *female* with Roaring Lion *male;* two berries matured, the seeds from which produced eighteen plants.

3. Houghton's Seedling *female* with Whitesmith *male;* one berry matured, from which only two plants were obtained, one of which died before coming into second leaf.

4. Houghton's Seedling *female* with Ashton's Seedling *male;* one berry matured, from which one plant only was produced.

5. Houghton's Seedling *female* with Broom Girl *male;* five berries matured, but none of the seeds germinated.

6. Houghton's Seedling *female* with Crown Bob *male;* no berries set. From six to ten flowers were operated on in each of these experiments.

1870.

7. Houghton's Seedling *female* with Whitesmith *male;* one berry matured, from which five plants were obtained in spring of 1871, two of which died while quite young.

8. Tried to cross the wild thornless gooseberry (*Ribes hirtellum*) with Roaring Lion and Whitesmith, but failed to obtain any result.

1871.

9. Houghton's Seedling *female* with Whitesmith *male;* operated on six flowers, two berries matured, the seeds from which produced twenty-two plants.

10. Houghton's Seedling *female* with Ashton's Seedling *male;* two berries matured, which also produced twenty-two plants.

11. Houghton's Seedling *female* with Broom Girl *male;* five berries matured, producing thirty-three plants.

12. Houghton's Seedling *female* with Warrington *male;* failed.

13. Houghton's Seedling *female* with Roaring Lion *male;* failed.

14. Downing's Seedling (white) *female* with Roaring Lion *male;* operated on five flowers, one berry matured, the seeds from which produced twelve plants.

15. Downing's Seedling *female* with Warrington *male;* failed.

16. Downing's Seedling *female* with Whitesmith *male;* operated on five flowers: failed.

17. Downing's Seedling *female* with Ashton's Seedling *male;* operated on three flowers; failed.

18 Wild thornless gooseberry (*Ribes hirtellum*) *female* with Roaring Lion *male;* operated on ten flowers, one berry matured, the seeds from which produced sixteen plants.

19. Wild thornless gooseberry *female* with Warrington *male;* operated on four flowers; failed.

20. Wild thornless gooseberry *female* with Ashton's Seedling *male:* failed.

21. Wild thornless gooseberry *female* with Whitesmith *male;* operated on eleven flowers; all failed.

1872.

22. Downing's Seedling *female* with Whitesmith *male;* failed.

23. Downing's Seedling *female* with Warrington *male;* failed.

24. Downing's Seedling *female* with Ashton's Seedling, *male;* one well-ripened berry was gathered.

25. Wild prickly gooseberry (*Ribes cumosbati*) *female* with Warrington *male;* failed.

26. Wild prickly gooseberry *female* with Ashton's Seedling *male;* two berries set, but did not ripen well.

27. Wild prickly gooseberry *female* with Roaring Lion *male;* operated on eleven flowers; failed.

28. Wild prickly gooseberry *female* with Downing's Seedling *male;* two berries set, but did not ripen well.

The seeds resulting from these latter crosses (1872) were sown on the 31st of July, and will not germinate until next spring.

THE GRAPE.

1868.

1. Clinton *female* with Syrian *male*; eighteen berries ripened, yielding thirty-five seeds, which produced nineteen plants.

2. Clinton *female* with Muscat Hamburgh *male*; two bunches of flowers were operated on, one berry only set, which was accidentally broken off before it matured.

3. Clinton *female* with Muscat D'Aout *male*; eight berries ripened, yielding thirteen seeds, which produced ten plants.

4. Clinton *female* with Black Hamburgh *male*; five berries ripened, yielding nine seeds, which produced eight plants.

5. Clinton *female* with Victoria Hamburgh *male*; nineteen berries ripened, yielding twenty-eight seeds, which produced fourteen plants.

6. Clinton *female* with Grizzly Frontignan *male*; failed.

7. Clinton *female* with Chasselas Musque *male*; five berries matured, yielding seven seeds, which produced two plants.

8. Clinton *female* with Royal Muscadine *male*; twenty-two berries matured, yielding forty-one seeds, which produced twenty-five plants.

9. Clinton *female* with Black Frontignan *male*; failed.

10. Clinton *female* with Rose Chasselas *male*; thirteen berries set, only a part of which ripened, yielding seven seeds, which produced four plants.

11. Clinton *female* with Buckland's Sweetwater *male*; thirty-three berries set, most of which matured, yielding forty-five seeds, which produced twenty-four plants.

A part of these seeds were sown in the fall, the remainder in the spring; the former germinated a few days earlier than the latter.

1869.

During this season my operations were mainly directed to obtaining crosses between a chance seedling, which was fruiting for the second time in my garden, and the European varieties. This seedling, which first fruited in 1868, although much smaller in berry and bunch than Clinton, was finer in flavour, and ripened a few days earlier, and at the same time proved equally hardy, vigorous and prolific.

12. Seedling *female* with Muscat Hamburgh *male*; six berries ripened, the seeds from which produced five plants.

13. Seedling, *female* with Duchess Buccleuch *male*; ten berries ripened, the seeds from which produced ten plants.

14. Seedling, *female* with Buckland's Sweetwater *male*; four berries ripened, the seeds from which produced four plants.

15. Seedling, *female* with Muscat Otonell *male*; nine berries ripened, the seeds of which produced eighteen plants.

16. Seedling, *female* with Black Frontignan *male*; twenty-eight berries set, most of which ripened: seed produced twenty-nine plants.

17. Seedling, *female* with Grizzly Frontignan *male*; nine berries ripened, the seed of which produced eight plants.

18. Seedling, *female* with Victoria Hamburgh *male*; fifteen berries set, some of which ripened, yielding seeds which produced six plants.

19. Seedling *female* with Chasselas Musque *male*: three berries set, but during the summer the branch on which they were growing was accidentally broken off, so they failed to ripen.

20. Seedling, *female* with Lady Downes *male*; ten berries ripened, the seeds from which produced seventeen plants, only five of which survived the first season.

I tried to cross Clinton with six different foreign varieties, but succeeded with only two —one with Muscat Hamburgh, four berries set; the other with Lady Downes, three berries set, but these unfortunately came to an untimely end, being accidentally destroyed before they were ripe. I also tried Delaware with six varieties of foreign grapes; Rogers No. 4 with one: Rogers No. 3 with two, and Concord with four varieties, but in every instance failed. Rarely have I had so little success as during that season.

1870.

21. Seedling, *female* with Muscat d'Aout *male;* seven berries ripened, yielding nineteen seeds, which produced fourteen plants.

22. Seedling, *female* with Chasselas Musque *male;* six berries ripened, yielding thirteen seeds, which produced nine plants.

Tried to cross Hartford Prolific with Syrian, Chasselas Musque, Black Hamburgh, and Muscat Hamburgh, but they all failed.

23. Clinton *female* with Duchess Buccleuch *male;* twelve berries set, but before they were half ripe the branch on which they were growing was broken off by a strong wind.

24. Clinton *female* with Muscat Hamburgh *male;* fourteen berries ripened, yielding nineteen seeds, which produced twelve plants.

25. Clinton *female* with Muscat Otonell *male;* four berries from this cross had nearly reached full size, when they were destroyed in like manner with (23).

26. Clinton *female* with Grizzly Frontignan *male;* twenty berries set, but this branch was also broken by high winds.

27. Clinton *female* with Chasselas Musque *male;* fifteen berries set, but the branch was broken by falling of trellis, from high winds.

28. Clinton *female* with Buckland's Sweetwater *male;* twelve berries set and were nearly full grown when they were destroyed with (27).

29. Clinton *female* with Duchess Buccleuch *male;* fourteen berries set, which were also destroyed by the same accident.

30. Clinton *female* with Syrian *male;* five berries grew to full size, but did not ripen well. They yielded eight seeds, which produced two plants.

31. Concord *female* with Duchess Buccleuch *male;* fourteen berries set, but did not ripen well, yielded sixteen seeds, ten of which were soft and immature: produced four plants.

32. Concord *female* with Syrian *male;* seven berries set and attained full size, but did not ripen well; yielded ten unripe seeds, none of which germinated.

33. Concord *female* with Muscat Hamburgh *male;* failed.

34. Concord *female* with Buckland's Sweetwater *male;* three berries reached full growth, but did not ripen well; yielded four seeds, none of which germinated.

35. Delaware *female* with Chasselas Musque *male;* one berry ripened, yielding one seed, which produced one plant.

36. Delaware *female* with Black Hamburgh *male;* failed.

37. Delaware *female* with Muscat Otonell *male;* failed.

38. Delaware *female* with Muscat Hamburgh *male;* seventeen berries ripened, yielding twenty seeds, which produced seventeen plants.

39. Delaware *female* with Black Frontignan *male;* failed.

40. Delaware *female* with Buckland's Sweetwater *male;* failed.

41. Delaware *female* with Victoria Hamburgh *male;* four berries ripened, yielding four seeds, which produced two plants.

1871.

42. Clinton *female* with Black Hamburgh *male;* three berries set but did not ripen well, yielded five seeds, none of which germinated.

43. Clinton *female* with Rose Chasselas *male;* failed.

44. Clinton *female* with Golden Chasselas *male;* nine berries ripened, yielding seventeen seeds, which produced four plants.

45. Clinton *female* with Duchess Buccleuch *male;* thirteen berries ripened, yielding twenty-nine seeds, which produced twenty-two plants.

46. Clinton *female* with Syrian *male;* eight berries ripened, yielding sixteen seeds, from which were obtained six plants.

47. Clinton, *female* with Buckland's Sweetwater *male;* eleven berries ripened, which yielded eighteen seeds, most of which were immature—none of them grew.

48. Clinton *female* with Royal Muscadine *male;* failed.

49. Clinton *female* with Muscat Hamburgh *male;* ripened ten berries, which yielded twenty-nine seeds, from which were obtained six plants.

50. Clinton *female* with Victoria Hamburgh *male;* failed.

51. Clinton *female* with Muscat Otonell *male;* ten berries ripened, yielding twenty-two seeds, which produced eleven plants.

52. Clinton *female* with Ingram's Hardy Muscat *male;* failed.

53. Clinton *female* with Lady Downes *male;* failed.

54. Clinton *female* with Delaware *male;* failed.

55. Clinton *female* with Rogers 4 *male;* four berries ripened, containing seven seeds, which yielded one plant.

56. Seedling, *female* with Black Hamburgh *male;* seventeen berries ripened, containing twenty-nine seeds, which yielded eighteen plants.

57. Seedling, *female* with Royal Muscadine *male;* ten berries ripened, containing twenty-five seeds. which produced seven plants.

58. Seedling, *female* with Ingram's Hardy Muscat *male;* nineteen berries ripened, containing fifty-nine seeds, which produced thirty-eight plants.

59 Delaware *female* with Muscat Otonell *male;* nine berries ripened, which yielded twelve seeds, none of which germinated.

60. Delaware *female* with Royal Muscadine *male;* failed.

61. Delaware *female* with Syrian *male;* seventeen berries ripened, containing twenty-two seeds, which yielded three plants.

62. Delaware *female* with Duchess Buccleuch *male;* twenty-eight berries ripened, containing forty four seeds, which produced twenty-two plants.

63. Delaware *female* with Lady Downes *male;* failed.

64. Delaware *female* with Black Hamburgh *male;* failed.

65. Delaware *female* with Ingram's Hardy Muscat *male;* failed.

66. Delaware *female* with Chasselas Musque *male;* ten berries ripened, containing nineteen seeds, which yielded three plants.

67. Delaware *female* with Grizzly Frontignan *male;* failed.

68. Delaware *female* with Buckland's Sweetwater *male;* failed.

69. Delaware *female* with Diana *male;* eleven berries ripened, containing nineteen seeds, which yielded five plants.

70. Delaware *female* with Rogers 4 *male;* failed.

71. Rogers 4 *female* with Clinton *male;* four berries ripened, containing five seeds, which yielded one plant.

72. Rogers 4 *female* with Hartford Prolific *male;* two berries ripened, containing four seeds, which yielded three plants.

73. Rogers 4 *female* with Delaware *male;* failed.

Tried to cross Hartford Prolific with Duchess Buccleuch, Wilmot's Hamburgh and Muscat Hamburgh, but all failed.

Tried also Concord with Buckland's Sweetwater, Muscat Hamburgh, Royal Muscadine, Chasselas Musque, Syrian, Ingram's Hardy Muscat, Wilmot's Hamburgh, Rose Chasselas, Rogers 15, and Rogers 4, but these also failed.

74. Concord *female* with Lady Downes *male;* four berries matured, containing four seeds, which were not well ripened and none of them germinated.

1872.

During this year I have entirely failed in all attempts at crossing the grape, except in one instance—that of a grape I got for Salem, but which is probably Rogers No. 43.

75. Rogers No. 43 *female* with Delaware *male;* five berries ripened, containing ten seeds, which have been sown in a seed bed.

I submit the list of failures. Hartford Prolific with Muscat Hamburgh, Buckland's Sweetwater, Duchess Buccleugh, Royal Muscadine, Rogers No. 43, Delaware and Rogers 4. It is worthy of remark here that I have never yet succeeded in crossing Hartford Prolific as *female* with any other variety. Also Rogers 43 with Duchess Buccleuch and Black Hamburgh; Delaware with Concord, Rogers 43, Rogers 4 and Hartford Prolific; Concord with Delaware, Ducchess Buccleuch, Rogers 43, Hartford Prolific, Muscat Hamburgh and Black Hamburgh.

RASPBERRY AND BLACKBERRY.

1869.

1. The only cross made this year was between Philadelphia *female* with Brinckle's Orange *male;* operated on three bunches of flowers; imperfect berries were formed on each bunch. The seeds from these were sown in August, and the young seedling plants appeared late in May 1870, and were transplanted early in June, numbering 76 in all. Of these, 12 died during the summer, leaving 54, which were transplanted into open ground the following spring (1871), planted four feet apart, where 52 of them made fair growth—the other two died. Forty-four have blossomed during the past season, twenty-six of which are probably worthless, the flowers being imperfect; twelve others set only fairly; eight had their canes winter-killed, or otherwise destroyed, and did not flower; the remaining six will probably be worth cultivating, some of which may prove of superior excellence. Although the foliage and habits of the plants varied much, some of them resembling the Philadelphia, others the Brinckle's Orange, yet the fruit of all, thus far, has been red. That which I think to be the most promising plant of them all has the berry large, conical, bright red, good flavour, moderately firm, and a most abundant bearer, later than the Philadelphia.

1870.

2. Doolittle Black Cap *female* with Brinckle's Orange raspberry *male;* in this instance some portions of the fruit set; but the branch was injured before it ripened, and withered prematurely.

3. Doolittle Black Cap *female* with Lawton blackberry *male;* several imperfect berries ripened, the seeds of which were planted as usual, just after ripening, but they failed to germinate.

4. Doolittle Black Cap *female* with Philadelphia *male;* operated on five flowers, all of which produced imperfect berries. Seeds from these yielded thirty-five plants the following spring (1871). Twenty-nine of them survived the first season, and this summer two of the strongest of the plants bore a few berries, which resembled the black cap in form, but were dark red instead of black, and the flavour seemed to be a curious mixture between the black and red raspberries. The plants were very small for fruit-bearing, and possibly the fruit did not attain its full perfection. These are all now strong plants, which will fruit well next season. I was curious to see whether these hybrids would follow the habits of the female in its mode of propagation, that of rooting from the tip, or would send up suckers like the male. I find, however, that, as far as I have seen, they all resemble the female in this respect, although they do not strike root so readily as the black cap does.

5. Philadelphia *female* with Lawton blackberry *male;* two imperfect berries were formed and matured, the seed of which was sown about the last of July, but did not germinate.

6. Philadelphia *female* with Mammoth Cluster black cap *male;* failed.

7. Philadelphia *female* with Kittatinny blackberry *male;* in this instance three imperfect berries matured, and seed was duly sown, but without result.

8. Brinckle's Orange *female* with Lawton blackberry *male;* one imperfect berry ripened, containing only two seeds, which also failed to germinate.

9. Brinckle's Orange *female* with Kittatinny blackberry *male;* failed.

10. Brinckle's Orange *female* with Mammoth cluster *male;* failed.

11. Brinckle's Orange *female* with Philadelphia *male;* failed.

12. Brinckle's Orange *female* with Doolittle Black Cap *male;* failed.

13. Lawton blackberry *female* with Philadelphia raspberry *male;* failed.

14. Lawton *female* with red Antwerp raspberry *male;* failed.

15. Lawton *female* with Doolittle Black Cap *male;* failed.

16. Lawton *female* with Brinckle's Orange raspberry *male;* failed.

1871.

17. Doolittle black cap *female* with Brinckle's Orange *male;* operated on six flowers; two or three imperfect berries were formed, but did not ripen well; seed failed to grow.

18. Doolittle Black Cap *female* with Lawton blackberry *male;* operated on four flowers, from which four imperfect berries were obtained; seed sown 20th July; one plant appeared this spring (1872), which died during the great drought of summer, after getting into the third leaf.

19. Doolittle Black Cap *female* with Franconia raspberry *male;* operated on three flowers; failed.

20. Doolittle Black Cap *female* with Kittatinny blackberry *male;* operated on six flowers; failed.

21. Doolittle Black Cap *female* with Sable Queen blackberry *male;* operated on five flowers; the branch on which these flowers grew was accidentally broken off a short time after the attempt to fertilize had taken place.

22. Brinckle's Orange *female* with Doolittle Black Cap *male;* operated on seven flowers, resulting in one well-ripened berry, the seed from which failed to germinate.

23. Brinckle's orange *female* with Mammoth cluster *male;* operated on five flowers; failed.

24. Brinckle's Orange *female* with Lawton blackberry *male;* operated on six flowers, from which were obtained four ripe berries, two nearly perfect, the other two with a few seeds only in each; one seed only germinated, but the young plant did not survive the drought which prevailed early in the summer.

25. Brinckle's Orange *female* with Kittatinny blackberry *male;* operated on five flowers; product, one nearly perfect berry, which ripened well; the seed from this produced three plants, all of which died while young, in the same manner as the last referred to.

26. Brinckle's Orange *female* with Sable Queen blackberry *male;* operated on four flowers; product, one well-ripened berry, nearly perfect, the seed of which has not germinated.

27. Philadelphia *female* with Mammoth Cluster *male;* operated on seven flowers; failed.

28. Philadelphia *female* with Lawton blackberry *male;* operated on six flowers from which four imperfect berries were gathered, containing seventeen seeds, none of which germinated.

29. Philadelphia *female* with Kittatinny blackberry *male;* operated on eight flowers; five very imperfect berries ripened, yielding twelve seeds in all, but only one germinated; the plant in this instance also died young.

30. Philadelphia *female* with Sable Queen blackberry *male;* operated on eight flowers, six of which set a few seeds, some not more than two or three each; two plants were produced, and they also died young.

31. Philadelphia *female* with Clarke raspberry *male;* operated on seven flowers; the branch on which these were situated accidentally broke, and withered before the seeds were fully ripe; one of the berries, however, had nearly ripened, and the seed from this produced six plants, five of which have died during the summer, one only remaining alive now.

32. Philadelphia *female* with Franconia raspberry *male;* this bunch was on the same branch as the last; the berries set, but withered before they were ripe; hence the seeds did not germinate.

33. Lawton blackberry *female* with Mammoth Cluster black cap *male;* one imperfect berry resulted, which produced two seeds only; these did not germinate.

34. Lawton blackberry *female* with Kittatinny blackberry *male;* three berries ripened well, producing sixty-eight seeds, not one of which has germinated.

35. Lawton blackberry *female* with Philadelphia raspberry *male;* one berry ripened, yielding many seeds, none of which have germinated.

36. Lawton blackberry *female* with Brinckle's Orange raspberry *male;* operated on four flowers; failed.

37. Lawton blackberry *female* with Sable Queen blackberry *male;* one berry ripened, yielding eleven seeds, none of which have germinated.

1872.

This year I have experimented but little with the raspberry or blackberry, and in every instance failed. I have tried to cross one of my hybrids between Philadelphia and

Brinckle's Orange, with Brinckle's Orange again, and also with Doolittle Black Cap, have also tried Brinckle's Orange with Wilson's early and Kittatinny blackberries, and the Lawton blackberry with Brinckle's Orange and Philadelphia raspberries; but not a berry has ripened in any instance.

THE PEAR.

1869.

Tried to cross Seckel with Duchess d'Angouleme, and Duchess d'Angouleme with Seckel, also Beurre Clairgeau, Flemish Beauty, Louise Bonne de Jersey, Beurre Diel, and Vicar of Winkfield, all with Seckel, but in every instance failed.

1870.

1. Seckel *female* with Duchess d'Angouleme *male;* in this instance one pear matured, yielding three seeds, not very well ripened, none of which grew.

Tried also to cross eight other varieties; they were operated on May 14th, and re-ouched with pollen May 17th, but all failed.

1871.

2. Bartlett *female* with Seckel *male;* failed.

3. Bartlett *female* with Easter Beurre *male;* two pears set and perfected, yielding ourteen well ripened seeds, but none of them have germinated.

4. Bartlett *female* with Lawrence *male;* failed.

5. Duchess d'Angouleme *female* with Bartlett *male;* failed.

6. Duchess d'Angouleme *female* with Seckel *male;* failed.

7. Seckel *female* with Duchess d'Angouleme *male;* operated on four flowers, three pears ripened yielding seventeen seeds, three of which have germinated, and the young trees are still living.

8. Seckel *female* with Bartlett *male*: operated on four blossoms, one pear set and ripened yielding only one perfect seed which has not germinated.

9. Seckel *female* with Doyenne d'Ete *male;* operated on three flowers, one pear perfected, yielding five seeds, none of which have germinated.

10. Seckel *female* with Flemish Beauty *male;* operated on two blossoms; failed.

11. Seckel *female* with Easter Beurre *male;* failed.

12. Glout Morceau *female* with Seckel *male;* operated on four flowers, one pear perfected, yielding seven seeds, three of which have germinated, and the young trees are living.

13. Glout Morceau *female* with White Doyenne *male;* operated on three flowers; failed.

14. Doyenne d' Ete *female* with Duchess d'Augouleme *male;* operated on three flowers; failed.

14. Doyenne d' Ete *female* with Bartlett *male;* operated on four flowers; failed.

16. Doyenne d' Ete *female* with Flemish Beauty *male;* failed.

17. Doyenne d' Ete *female* with Seckel *male;* operated on six blossoms; failed.

18. Louise Bonne de Jersey *female* with Bartlett *male;* operated on two blossoms, failed.

19. Louise Bonne de Jersey *female* with Seckel *male;* operated on three flowers; failed.

20. Louise Bonne de Jersey *female* with Duchess d'Angouleme *male;* operated on six flowers; failed.

Several attempts were made to cross the pear with the apple, and *vice versa*, both in 1870 and 1871, and although in every instance the pollen was abundant, and was liberally applied, no result was gained.

Experiments were also made with the Cherry. Early Richmond was worked with Elton, and Governor Wood, and Late Duke with Rockport Bigarreau, all without result. Rockport Bigarreau was crossed with Late Duke; eleven flowers were operated and no one cherry perfected, but the seed failed to grow.

Having now completed these details, which to those who have paid little attention to this subject, will, I fear, be regarded as very uninteresting, a summary will be given of work done and results gained, followed by a list of the various hybrids which still survive. It is unnecessary to enter into particulars regarding the mishaps which have from time to time lessened the number of these seedlings, the severe cold of winter, the summer's drought and untoward accidents, have all helped in thinning out the more delicate plants. Possibly some of the seeds sown in the fall of 1871, which have thus far failed to grow, may germinate in the spring of 1873.

The Gooseberry.

1868	About	48	flowers	operated	on,	yielding	15	berries,	producing	41 plants.
1870	"	12	"	"	"		1	"	"	5 "
1871	"	160	"	"	"		11	"	"	105 "

Of the seedlings of 1868, 23 are living, 10 of which fruited during the past season, and several of them promise to be worthy of cultivation. The variations in habit and growth of bushes, as well as in the form and colour of fruit, are very striking, some of them taking after one parent, others after the other. Of those of 1870, only one now remains; while of the seedlings of 1871, sixty-six now survive.

In working with the *Grape* from 25 to 30 flowers or more were operated on in each case; supposing the average to be 25, at this ratio in

1868.	300	Flowers	were	operated	on	yielding	116	berries	producing 106 plants.
1869.	675	"		"		"	76	"	" 85 "
1870.	625	"		"		"	77	"	" 61 "
1871.	1125	"		"		"	196	"	" 149 "
1872.	475	"		"		"	5	"	producing ten seeds just planted.

Of the 106 seedlings from seed of 1868, only one now survives, and that is weakly. Of the 85 of 1869, 27 are still living. Of the 61 of 1870, 43 are now living, while of the 149 the result of the labours of 1871, 110 still survive.

The Raspberry and Blackberry.

In experimenting on the *Raspberry* and *Blackberry*, an average of five or six flowers were worked, taking the smaller number in

1869.	15	Flowers	were	operated	on,	yielding		berries,	producing 76 plants.
1870.	75	"		"		"	14	"	" 35 "
1871.	110	"		"		"	35	"	" 14 "
1872.	35	"		"		"	none.		

The Pear.

Not many crosses have been made by me with *Pears*, I have been very unsuccessful in this department.

1869. About 50 flowers were operated on without result.

1870. " 45 " " yielding one pear which ripened 3 seeds which did not germinate.

1871. About 95 flowers were worked, 8 pears ripened yielding 44 seeds, which have thus far only produced six plants.

List of Crosses Now Living, with their Numbers and Parentage.

The Gooseberry, from seed of

1868. 8 Plants Houghton's Seedling *female* with Warrington *male*.
" 14 " " " " Roaring Lion "
" 1 " " " " Ashton's Seedling "

from seed of 1870, 1 Plant Houghton's Seedling, *female*, with Whitesmith *male*.
" 1871, 16 " " " " " Ashton's Seedling *male*.

from seed of	1871,	12	Plant	Houghton's Seedling, *female*, with Whitesmith.
"	"	21	"	" " " " Broom Girl.
"	"	9	"	Downing's Seedling *female* with Roaring Lion *male*.
"	"	8	"	Wild thornless Gooseberry (Ribes hirtellum) *female* with Roaring Lion *male*.
		90		The seeds resulting from the work of 1872 are still in the ground, see Nos. 24, 26, and 28.

THE GRAPE.

From seed of	1868,	1	Plant	Clinton *female* with	Syrian *male*.	
" "	1869,	1	"	Seedling *female* with	Muscat Hamburgh *male*.	
" "	"	4	"	" "	" Duchess Buccleuch "	
" "	"	1	"	" "	" Buckland's Sweetwater *male*.	
" "	"	3	"	" "	" Muscat Otonell "	
" "	"	10	"	" "	" Black Frontignan "	
" "	"	2	"	" "	" Grizzly Frontignan "	
" "	"	6	"	" "	" Victoria Hamburgh "	
" "	1870,	10	"	Clinton *female* with	Muscat Hamburgh "	
" "	"	2	"	" "	" Syrian "	
" "	"	4	"	Concord "	" Duchess Buccleuch "	
" "	"	11	"	Delaware "	" Muscat Hamburgh "	
" "	"	2	"	" "	" Victoria Hamburgh "	
" "	"	1	"	" "	" Chasselas Musque "	
" "	"	10	"	Seedling "	" Muscat D'Aout "	
" "	"	3	"	" "	" Chasselas Musque "	
" "	1871,	1	"	Clinton *female*, with	Rogers No. 4 *male*	
" "	"	5	"	" "	" Muscat Hamburgh "	
" "	"	3	"	" "	" Golden Chasselas "	
" "	"	1	"	" "	" Buckland's Sweetwater "	
" "	"	3	"	" "	" Syrian "	
" "	"	16	"	" "	" Muscat Otonell "	
" "	"	18	"	Delaware "	" Duchess Buccleuch "	
" "	"	2	"	" "	" Syrian "	
" "	"	2	"	" "	" Chasselas Musque "	
" "	"	12	"	" "	" Diana "	
" "	"	1	"	Roger's No. 4	" Clinton "	
" "	"	3	"	Roger's No. 4	" Hartford Prolific "	
" "	"	26	"	Seedling *female*	" Ingram's Hardy Muscat "	
" "	"	5	"	" "	" Royal Muscadine "	
" "	"	12	"	" "	" Black Hamburgh "	
		181		The seeds resulting from the work of 1872 are still in the ground, see No. 74.		

THE RASPBERRY.

From seed of	1869,	52	Plants,	Philadelphia *female* with Brinckle's Orange *male*.
" "	1870,	29	"	Doolittle Black-cap, *female*, with Philadelphia "
" "	1871,	1	"	Philadelphia " " Clarke "
		82		

THE PEAR.

From seed of	1871,	3	Plants,	Seckel *female* with Duchess d'Angouleme *male*.
" "	"	3	"	Glout Morceau *female* with Seckel *male*.
		6		

REPORT OF THE COMMITTEE

Appointed to examine personally the County of Huron, and report upon the character of the soil, and the capabilities of the County for the production of Fruit, its peculiar advantages and disadvantages, and present Fruit productions.

To the President and Directors of the Fruit Growers' Association of Ontario.

GENTLEMEN—The undersigned, appointed by your Association to report upon the capabilities of the County of Huron for fruit growing, and what has been done in this direction in that section of the country, report as follows:—

Owing to business engagements, we found it impossible to devote so much time to a personal examination of all parts of the County, owing to its large extent, as we would have wished, and we arranged to commence our labours by putting in an appearance at the exhibition of the Goderich Horticultural Society, held at Goderich, September 18. Here we found a splendid collection of fruit of all kinds, proving most incontestibly the admirable adaptability of the County for fruit growing.

Apples.—Apples were splendid, and in great variety. The principal exhibitors of this fruit were Messrs. George Cox and James Torrance, of Goderich Township, and John Stewart, of Colborne. The principal varieties shown, and in greatest perfection, were Rhode Island Greening, Baldwin, Duchess of Oldenburg, Hawley Northern Spy, Swaar, Snow, Twenty-ounce Pippin, Roxbury Russet, and Hubbardston's Non-such. The remarkable size of the fruit, and its clean and perfect growth, free from spot or blemish, was remarkable.

Pears.—In pears, the principal exhibitors were Messrs. A. M. Ross and A. Watson, of Goderich, and Stewart, of Colborne. The samples shown were very fine, embracing Flemish Beauty, Bartlett, Louise Bonne de Jersey, Belle Lucrative, Onondaga, Stevens Genessee, Beurre d'Anjou, and Vicar of Winkfield. The quality and size of the fruit spoke well for the success obtained in the cultivation of this fruit.

Plums.—This section of the country has become famed for its plums, and, as might therefore be expected, the show of this fine fruit was splendid. The principal exhibitors were Messrs. Ross, Watson, Stewart, and Moseley. Extra fine specimens were shown of Washington, Jefferson, Pond's Seedling, Victoria, Duane's Purple, Smith's Orleans, Bradshaw, and Lombard. The curculio has only made its appearance in this section within the last two years, but the rot has been found more destructive than the little Turk. Growers say the latter can be kept under by attention, whereas the remedy for the former has not yet been discovered.

Peaches.—The fine show of this rather tender fruit proves satisfactorily that the portion of the County lying along the eastern shore of Lake Huron can take rank as one of the most favoured for fruit growing. The varieties shown were Early and Late Crawford, Bergens Yellow, George IV, Large Early York, and Gross Mignonne. The principal exhibitors were Messrs. Moseley, Henry Horton, Cox, and Ross.

Grapes.—Of open air Grapes, a very fine show was made. Mr. Ross, the principal exhibitor, showed twenty-four varieties, and the remark made as to favourable climate, under peaches, received from the show of this fruit further corroboration. Some very fine bunches of Eumelan were shown by Mr. Ross from the vine sent out by the Association in 1870, and he is warm in his praises of the promise of this variety. Creveling, also, was good, and the bunches showed a greater compactness than is usual with this variety. Looseness of bunch is the only fault of this grape, and if grown alongside of Concord, Isabella, or other free setting variety, this defect is much lessened. In Grapes under glass, the principal exhibitors were M. C. Cameron, Esq., M.P., and Dr. M'Dougall. Altogether, the exhibition was an evidence that fruit growing has taken a firm and healthy hold of the people of this section, and that in it they have got an element of amusement and profit that seems to thrive in their hands.

A tour was made through the orchards of some of the principal fruit growers in Goderich Town and Township, and in Stanley. The thrifty and healthy character of the trees was everywhere remarkable, and the size of the Plum trees, in many places, was

noticeable, black knot not having been fatal to this tree here, as in many other localities. Amongst the orchards we visited, we may mention those of Messrs. John Hunter, H. Hinks, James Torrance, John Moseley, and W. Hall, of Goderich Township, Ritchie, of Stanley, and James Stewart, of Colborne—all successful fruit growers, and, as their success shows, take an intelligent interest in the care and management of their trees. Without giving an individual opinion of each of the parties visited, we found that the general testimony was in favour of the following lists of Apples and Pears. In Apples—Baldwin, Spy, Twenty-ounce Pippin, Primate, Red Astrachan, Rhode Island Greening, Roxbury Russet, Ribston Pippin, Pomme Grise, Hubbardston's Non-such, King of Tompkins, Snow, Duchess of Oldenburg, and Swaar. In Pears—Flemish Beauty, Louise Bonne, Bartlett, Howell, Belle Lucrative, Onondaga, Winter Nelis, Buerre Diel, and Beurre d'Anjou.

We also visited some of the most successful growers in the neighbourhood of Seaforth, and inspected the fruit shown at the Tuckersmith fall show, held in Seaforth. Amongst those in this section whom we interviewed we mention Messrs. James Dickson, R. Londesboro, John Londesboro, and E. Cresswell, of Tuckersmith; John M'Millan, of Hullett; George Hamilton, of Cromarty; and T. Torrance and James Scott, of McKillop. Here the same lists of Apples and Pears as already given for vicinity of Goderich seem to have preference, with the exception of the Baldwin, which is found tender here, the trees being liable to be winter killed. The fruit crop here had not been up to the average this season, owing to the extreme drought, which had affected the size of the fruit very materially, and had caused a great deal of it to drop prematurely. Pear blight had been very bad this season. One thing we noticed at the show at Seaforth, and to some extent also at Goderich—viz. the erroneous names under which much of the fruit is shown. This is mainly due to the practice of purchasing trees from travelling agents, from whom, as a rule, there is no guarantee of getting the trees true to name. Let intending planters deal directly with responsible nurserymen, even if it costs them a few dollars more for freight or express charges, and there will not be so much of this almost universal complaint that the trees, when they come to fruit, are not of the varieties ordered. Let nurserymen also take a warning, for assuredly those who are found to be most reliable in this respect, and whose trees turn out true to name, will receive the public patronage.

The character of the soil of the County is generally of a rich clay loam; but along the lake shore it is lighter, and this lighter soil, together with the tempering influence of the lake, makes the growth of Peaches, Nectarines, Apricots, and Grapes, along a belt of from six to eight miles next the lake, more successful than further inland.

From all we have seen, and from the testimony of cultivators, we would class the County of Huron as equal to any section of Canada for Apples, Pears, and Plums; for Grapes, Peaches, and the more tender varieties of fruit—the belt along the shore of Lake Huron is almost if not fully equal to the Niagara District. In all sections of the County, fruit growing is and can be made profitable. Young orchards are being planted largely, and in a few years this County will be one of the best fruit producing sections of Canada. On the disputed point as to the proper treatment of bearing orchards, the evidence of cultivators here is mostly in favour of seeding down the orchard in grass, and mulching liberally with barn-yard manure; but this must not be done with young trees. Many young orchards of fair promise have been stunted and cramped in their growth, if not altogether destroyed, by allowing the young trees to be choked with grass. For the first five or six years, the orchard should be lightly cultivated in root crops, and after the trees are well established, and come fairly into bearing, it may be seeded down in grass.

Many remarked to us, when travelling round, that, when they planted again, they would have nothing but low-headed trees, the high winds in September shaked so much of the fruit off, which was quite lost; and the difficulty of carefully hand picking fruit off high trees was very great in comparison to low-branched ones.

We have no doubt that, in a few years, many large orchards will be planted all through that section, as both climate and soil are well adapted to the growth of the Apple.

D. Caldwell,
A. M. Ross, } *Committee.*

MISCELLANEOUS ITEMS.

Cats as Fruit and Seed Protectors.

A correspondent of *Land and Water* writes—"It often appears to me that people for the most part are not aware of the great use cats are to us. Of course, we know of their use with respect to mice and rats, but do we generally know of the invaluable help they can give us in protecting from birds our garden fruits and flowers?

To keep off the birds how simple, how certain, how small is the cost of a cat on a small chain sliding on a wire, and giving the animal the walk up and down the whole length of the strawberry beds. A knot at each end of the wire readily prevents the cat from twisting round the post which supports the wire, and a small kennel placed in the middle of the walk affords her shelter and a home for her kittens. In large gardens a second cat is required, and the young ones in their frequent visits to each other greatly assist in scaring away the birds. I have for more than thirty years used, and seen used with perfect success, this easy method of protecting fruit, and the very same plan is equally good in keeping hares and rabbits off flower beds. After the first few days cats in no way dislike this partial restraint, and when set quite free, after a few weeks watching, they will of their own accord continue on guard. The kittens more especially attach themselves to this garden occupation, and of their own accord become the gardener's best allies."

Fruit at Glencoe.

No grape ripening later than the Delaware has ripened with me this last season. The bunches of a few Clintons and of all the Ionas were thinned by rot. The severe frost of the 19th and 20th September left much unripened wood. Of fifty-one varieties in cultivation, the Autuchon alone had the foliage mildewed, and that so badly that there is not a ripe bud on the vine.

The spotted *Pelidnota* and the *Wood Nymph* put in an appearance, but not in sufficient numbers to injure the vines,

The Israella grape vine sun-scalds, and is a very slow grower. The Adirondac winter kills.

W. Sutherland.

Roundhouse Vineyard, Jan., 1872.

On Fertilizers.—I suppose I am expected to say something about fertilizers; all agriculturists do. When you plant, you think you cannot fertilize too much; when you get the bills for the manure, you think you cannot fertilize too little. It is the great question of modern times—how to fertilize without ruinous expense; how, in short, not to starve the earth to death while we get our living out of it. Practically, the business is hardly to the taste of a person of a poetic turn of mind. The details of fertilizing are not agreeable. It is much pleasanter and easier to fertilize with a pen, as the agricultural writers do, than with a fork.—*My Summer in a Garden.*

Fruit at Berlin.

To the Directors of the Fruit Growers' Association of Ontario.

The introduction of the Tetofsky apple into this part of the country would be a great benefit to the community, as it would just meet the want felt, viz: an apple to fill the place of the Early Harvest, which is here rather a poor bearer and the fruit so scabby as to be almost useless.

I introduced the Duchess of Oldenburg to this neighbourhood about ten years ago, and now it is generally disseminated. Those who have bearing trees of this variety, and it is a heavy bearer, usually get twice as much per bushel as for other apples, for although the fruit is not first rate in quality, it has a splendid appearance, a quality that is of some importance now-a-days. The ladies say it is splendid for cooking.

The Wagner apple was introduced here about fifteen years ago from Western New

York, and was subsequently propagated and widely disseminated by Mr. James Dickie, a nursery-man, near Galt. It appears to be a good cropper, and the fruit is of very good quality; but I am inclined to think the tree is not a very vigorous grower, its habit being much like that of the Keswick Codlin or Hawthornden. It is not as hardy a tree as the Northern Spy.

I fruited the Beurre Clairgeau for two or three years, but I must say that I did not find it to be in point of flavour any improvement upon a Swedish turnip. Towards maturity its fine appearance bespeaks better things for it. The fruit, however, sells well for canning purposes, and the tree, with me, is as hardy as a sugar maple.

The McLaughlin plum is certainly a titbit in point of flavour, but here it is not very productive, and not very hardy. It may do very well in the collection of an amateur, but the Washington and Imperial Gage are the plums to make money out of.

I find that all the purple and golden plums, such as Bingham and Coe's Golden Drop, are more tender than the green varieties, and should be planted in well drained ground and well protected from cold winds. In my collection of plums I find the Bradshaw and Pond's seedling the only two varieties yet introduced that are able to take care of themselves.

I have not tried to grow peaches, not because the trees will not grow but because they grow too well, I am, however, sanguine that in the course of a few years, when the rank fertility of the soil is sufficiently exhausted, peaches will live here as well as in some other parts of the Province.

When I settled here, some twenty-five years ago, the Heart and Bigarreau cherries would not grow, now large quantities are planted annually with success.

In the vine line I am about full, and have no room for the introduction of any more, for experimental purposes, until something turns up that will supersede the Delaware. As long as I can sell Delawares to the exclusion of the black varieties from the market I am satisfied.

SIMON ROY.

A GARDENER'S PLEASURES.—There is no prettier sight, to my eye, than a gardener on a ladder in his grape arbour, selecting the heaviest clusters of grapes, and handing them down to one and another of a group of neighbours and friends, who stand under the shade of the trees, flecked with the sunlight, and cry "How sweet!" "What nice ones!" and the like—remarks encouraging to the man on the ladder. It is a great pleasure to see people eat grapes.—*Warner.*

PEAR-TREE BLIGHT.

On page of 35 of the proceedings of the thirteenth session of the American Pomological Society is a very interesting letter from J. F. Tallant, of Burlington, Iowa, in which among other things he says:—"I have lost fifty times as many (pear) trees by blight as I have now growing. In 1864, I was induced to cease cultivating them altogether, to allow the grass to grow close up to the trees, only keeping it cut every few weeks, and to obviate the binding and repressive effects of this treatment by putting a wheelbarrow load of manure around each tree every autumn. Since that date, eight years ago, I have never lost a tree, and even saved some old wrecks which I had given up as past cure, which are now the most interesting specimens on the place. The success of the present year has been that of the preceding seven. I do not give this treatment at all as a cure for blight, for it may return again; but I do wish to make it public, that others may try the same method with, it is hoped, the same success."

NEW PEAR—ELLIOT'S EARLY.

To the Directors of the Fruit Growers' Association of Ontario.

Your Committee on Seedling Fruits, beg to report upon the Elliot seedling pear, submitted and sent from two sections of Ontario, one package of specimens coming from Mr. James Dougall, of Windsor; the other from Mr. Simon Roy, of Berlin.

We proceed to describe those sent by Mr. Dougall of Windsor, and received 27th July 1872, fully ripe at this date ; fruit rather small in size, short pyriform with a very small fleshy lip ; skin smooth, pale yellowish green, with a pale brown cheek ; one side of these pears is flattish, having somewhat the appearance of a suture, stalk stout, from 2 to 2½ inches long, inserted without depression, a little, oblique calyx open and set in a moderately wide corrugated basin. Flesh juicy and agreeably refreshing ; from appearance of spur and stems, fruit hangs in clusters.

As to the other package containing specimens submitted by Mr. Simon Roy, of Berlin, and also called the Elliott Seedling, your committee mark such a difference in many essential respects from those received from Windsor, will proceed to point out these marks of distinction, namely, size of fruit nearly medium. As compared with those coming from Windsor, long pyriform, with a distinctly brown streaked cheek, calyx closed, and stems, which unfortunately were curtailed in their full length, set at nearly right angles to the fruit.

Fruit having unusually fleshy protuberance or lip extending along the upper side of this extremely oblique stem, half an inch, all the specimens at this date August the 2nd still firm and unripe. Your committee feel considerable doubt as to their being the product of the same seedling, and would recommend the appointment of a suitable committee to visit the trees in bearing, another season, should the gentlemen putting them forward request it.

All of which we beg to submit.

W. Holton.
John Freed.
W. H. Mills.
R. Burnet.

Plum Trees.

Records of failure may be useful, but records of success are much more inviting to your rural friends. Perhaps, sir, you are the owner of a plum tree and have known the feeling of disappointment, when morning after morning you have found half-grown plums carpeting the ground. Perhaps you have, on examination, found the stem almost eaten through, or so black and decayed that it could no longer bear the weight ; and almost always a minute worm in the plum itself. Such was the fate of my plum crop for a number of years, but now it is as certain to ripen into full maturity as is the crop of the adjoining apple orchard. My remedy is a simple one. When the tree is in full blow, and whilst the dew is still on, I scatter several handsful of unleached hardwood ashes on the blossoms, repeating it a day or two after. For the last four years this has insured me a most abundant crop. I suppose that it destroys the egg of the insect which does the mischief, but, whatever the theory, the fact will prove of service to your readers. A word of caution is necessary here. Ashes have not proved serviceable in my experience to either apple or peach trees, when applied to the blossoms, though, of course, valuable as fertilizers. This "top dressing" is worthy of much study, and many experiments.—Plaster on "apple blossoms" is very beneficial to that crop, but I am informed that it is death to the "peach."

Shade Trees.

You had some time since a most serviceable article in the *Globe* on this subject, but the writer apparently had not the experience to enable him to do more than make general suggestions. I have planted many trees for ornament and shade, and have been successful in making them live, but you have so often pointed out the best methods both of "taking up" and setting out," that I might fairly say my success has been from following nature's laws as pointed out by you. My object now, is simply to speak of the best varieties for shade and ornament. I do not like uniformity. Occasionally an avenue of elms may be very imposing, but to most eyes there is a special charm in variety, especially if there is a tolerable uniformity in the rapidity of growth. To secure this I mulch plentifully with long manure in the spring, and in the fall dig it in, leaving the soil open and loose for the action of the frost. Of all ornamental trees I give the preference to the "basswood." Its broad leaf soon makes a young tree a welcome shade from the hot sun, and its habit of growth makes quite as ornamental a top as "sugar maple." The

"whitewood" with its beautiful "tulip" flower, is also hardy, and grows into a handsome shape. All know the value of the "sugar maple," yet where the soil is heavy, it seems to linger out an unhappy and unhealthy existence. For such soil the "swamp maple" is much better adapted, and has the additional merit of more beautiful tints when touched with the first autumn frosts. I use, and suggest for the use of others, a mingling of the above varieties with the elm, as sure to make beautiful city, town, or rural village. They should be at least 25 feet apart. Were our country roads thus planted, at but trifling expense, it would, I am sure, develop a love of the beautiful, besides proving very attractive to the travel-worn emigrant, seeking a new home.

CHARLES DAWBARN.

ORNAMENTAL SHADE TREES.

In driving through some of our townships one cannot fail to notice that the appearance of the country is rendered very desolate by the absence of isolated and ornamental trees. Not to enter here into the question of the ill effects upon the surface of the land of an utter denuding of all trees, we would simply point to the barren appearance that is the result of such wholesale mutilation.

It is urged that it is useless to leave forest trees standing by themselves when the bush is cut down. Doubtless, it is true that most varieties of forest trees will die or be up-rooted by high winds, when deprived of the shelter of companions. Where such is the case, though the appearance of certain townships proves that it is not always a necessary sequence, we would have every inducement held out to our farmers to plant out saplings. If owners of dwellings or of farms have not sufficient taste to beautify their own property, let the public at least endeavour to induce such men, by the hopes of pecuniary compensation, to plant trees along the public roads. Let the counties or townships vote a bonus to the planter for every tree which shall be set along the highway, and which shall be living, say, three years after planting. If a tree survive its removal for three years, the chances are that it will grow to a large and handsome one.

If we live ten years from to-day, such trees as are now set out will do much to relieve the desolate appearance of too many of our landscapes; and to those who are living twenty years hence, and to our children, the appearance of the country will rival the arboreal beauty of old England. We may then, with our old country friends, eulogise "the shady lanes and leafy bowers."

EFFECTS OF FORESTS ON CLIMATE.

The following observations (which we find in the *London Garden*), while they may not establish the effects of forests on climate are certainly valuable in that direction. They were made by M. Mathieu, Professor in the School of Forestry at Nancy and were reported by him to the Congres Agricole Libre, at Nancy, in 1869. They include the first eight months of each of the years named, and were made in reference to the following points:—

1st. Does the wooded condition of a country exercise an influence upon the amount of rain it receives?

The answer to this question was attempted by taking two stations at an equal height above the sea, but separated between fifteen and twenty miles, the one situated in a wooded, and the other in a cultivated country, and observing the rainfall. The result reduced to inches was that at the Agricultural station the rainfall for the three seasons was 82·02 inches, and at the Forest station 93·13 inches; difference in favour of the Forest station of 11·11 inches.

The second question was:—Does the covert of the forest, by intercepting the rain falling from the atmosphere, diminish to a considerable extent the amount of rain that reaches the ground? This was answered by placing rain gauges beneath the trees, and in the open ground close at hand, and comparing results which were as follow:—

In open ground.....	92·00 inches.
Under the trees.....	87·74 "
Difference in favour of open ground.	4·26 "

This shows that while some of the rainfall in a forest does not reach the ground, still by comparing what did reach it with the result at the Agricultural station, we have 87.74 inches for the rainfall under the trees, and 82·02 inches for the fall at the Agricultural station, an excess of 5·72 inches in the Forest.

A third question as to the effect of a wooded country on the conservation of the moisture received by the soil? The answer was sought in a comparison of the evaporation from two equal vessels, one placed in the forest, the other in the open ground. Evaporation went on five times as rapidly, taking the whole year into consideration, in the open air as in the forest, ranging from three to six times, between April and July; 85 per cent. of the rain falling in the open field evaporated, whilst only 22 per cent. of that falling in the forest was lost.

The fourth question was as to the influence of forests upon temperature. The experiments in this direction had been conducted but a short time, but go to show that the mean annual temperature is lower in the woods than in the open country, and that the difference is least in winter and greatest in summer. In 1868 the mean temperature of the forest was lower than that of the open fields by 4°·35 in the morning, and 9°·33 at night, in July, which difference fell in December to 0°·48 in the morning and 0°·94 at night. Again, the average variation in temperature was much greater in the open country than under the cover of the forest between day and night. It ranged from 0°·05 to 8°·57 in the open air, but only from 0°·04 to 1°·22 in the forest.

Grapes at Owen Sound.

I had a fine display of grapes last year, especially Rogers' 3, 4, and 15, Concord Creveling, Clinton, Isabella, and a large white one which I cannot name. Iona, Israella, and Delaware do not seem to thrive with me. I am sorry to say the greater part of the grapes were cut down by a very early frost on the night between the 17th and 18th of September. Nearly all within eighteen inches of the ground were saved. No doubt the protection of the leaves and the heat from the warm ground were the cause of this.

Of pears, Beurre Clairgeau (magnificent), Graslin, and Seckel were the best. Beurre Easter was unshapely and gritty. Had a few fine quince. Cherries and peaches do not thrive very well. Plums were superb. Apples all good except the Baldwin; it does not seem to get on in this region. My fine trees have all come to grief. I had a fine display of roses and shrubs last season.

William Roy.

Early Joe Apple.

I wish to call the attention of your numerous readers to the excellent qualities of the Early Joe Apple. In my opinion we do not possess another summer dessert apple that can at all compare with it in flavour. We have been enjoying the fruit in my family for the past fortnight, and to-day, September 2nd, as the last are gathered, only regrets are felt that they are nearly gone. It is a great pity that it has not been more widely disseminated, and its most excellent flavour more generally known. When young the tree is a slow grower, and nurserymen have been at no pains to sound its praise as it deserves, because there was no profit in raising the tree at ordinary prices. Yet I am sure that were fruit raisers aware of its excellence they would not hesitate to pay twice the price of ordinary apple trees to obtain it. In Beadle's Canadian Gardener it is stated that the tree seems to be nearly, if not quite, as hardy as the Red Astrachan, and if this be so there can be no difficulty in the way of its being grown in nearly every fruit garden in Ontario.

My tree commenced to bear very young, and has continued to yield good crops of fair, medium sized fruit. The apples have a very handsome appearance, quite red on the side exposed to the sun, and on the shaded side very prettily streaked with red on a light yellow ground. The skin is sprinkled all over with light dots, which usually increase in number towards the eye. The flesh has a rich yellow tint, is very tender, breaking, fine grained, juicy, and of a most agreeable somewhat spicy vinous flavour—quality the very best Every one who enjoys such a fruit, ought not to be without at least one tree of the Early Joe.

The Garden.

I awake in the morning—and a thriving garden will wake a person up two hours before he ought to be out of bed—and I think of the tomato plants, the leaves like fine lace-work, owing to black bugs that skip around, and can't be caught. Somebody ought to get up before the dew is off (why don't the dew stay on till after a reasonable breakfast ?) and sprinkle soot on the leaves. I wonder if it is I. Soot is so much blacker than the bugs, that they are disgusted, and go away. You can't get up too early if you have a garden. You must be early due yourself if you get ahead of the bugs. I think that, on the whole, it would be best to sit up all night, and sleep day times. Things appear to go on in the night in the garden uncommonly. It would be less trouble to stay up than it is to get up so early.—*My Summer in a Garden.*

Fruit in New Brunswick.

I have been engaged for several years in growing fruit trees, and being tolerably successful, I intend its further pursuit. I have had scions from different parts of Nova Scotia, some of which have been prosperous in this locality, others less so. Our most prosperous have been the R. I. Greening, Hubbardston Nonsuch, Alexander and Ribston Pippin. English Red Streak and Golden Pippin are good samples for our climate. My Nursery is situate near the Bay of Fundy, on the north side of a slope exposed to the north and north-west winds, and the county (Albert,) fronts on this Bay for some thirty miles. The south-west winds blowing directly up the Bay are unfavourable for fruit growing, yet the most hardy kinds are prosperous.

I have made experiments with wind-breaks for a shelter to my young trees, and find these answer a good purpose.

I see by the *Globe* that the Fruit Growers' Association of Ontario is giving encouragement to its members by supplying them with hardy varieties of scions and young trees, and an annual report containing valuable information.

I should be pleased to become a member of the Association if it be advisable. I enclose a dollar for this purpose.

Isaiah Tingley.

Hopewell Corner,
Albert County,
New Brunswick.

Results of Curculio Catching.

In 1871, Mr. Samuel Burner, of Hamilton, a member of the Fruit Growers' Association of Ontario, by jarring his plum trees, caught *three thousand one hundred and sixty-one* curculio, and drew from the Association therefor the prize of ten dollars. He now writes to the Secretary of the Association as follows :—

"With regard to the number I have caught this season, I might say that I have "caught but few, as compared with last year, only *eight hundred and six* altogether, or "only two more than I caught in one morning last year. But the result is equally "satisfactory, I have a splendid crop of clean plums."

A few days ago we were in the garden of Dr. L. Cross of St. Catharines, and noticed that his plum trees were well filled with fine fruit. The Doctor said that he was well satisfied with the results of but a few hours' work ; that for about fifteen days he had spent something like an hour each day in jarring the trees and securing the curculio, and that now he had about a hundred trees well filled with choice plums, and that taking the labour in a pecuniary point of view, he would be most amply repaid for his expenditure in catching the curculio.

There is no reason then why we should let the curculio rob us of our plums. None but the lazy or careless need be without this fine fruit.

Catching Curculio.

My mode of operation is simply this : I take five yards of ten cent cotton, cut the same in two, then sew the two pieces together for one-half the length ; at one

end fasten a long stick, at the other end two short sticks, and then the catcher is complete.

I have eighteen plum trees. Early in the morning and about sundown are the best times in which to catch them in fair weather, for they are certain to take wing if the trees are jarred in the middle of the day.

In 1869 I jarred my trees, and had a fair crop of plums. In 1870 I let the curculio have their way, and I had no plums. In 1871 I declared war against the enemy on the 21st day of May, and continued the contest until the 20th of June, after which time I had no trouble until the fruit began to change colour, when the plums and peaches began to rot. For some time I was baffled in my attempts to ascertain the cause, but by watching closely I at length found the cause without a doubt. I found a plum curculio taking his meal on a peach, and in three days the peach began to rot; next I found my enemy taking his meal on a plum. In two days after the plum began to show signs of rot.

The following is a memorandum of the results of my jarring on the several days mentioned during the season of 1871 :—

	Morning.	Evening.
May 21	0	12
" 22	1	0
" 28	0	16
" 29	1	33
" 30	41	28
" 31	85	50
June 1	18	22
" 2	21	28
" 3	0	25
" 4	23	38
" 5	5	15
" 6	9	2
" 7	10	4
" 8	5	5
" 9	0	1
" 10	2	3
" 11	4	0
" 12	0	3
" 13	1	1
" 14	0	4
" 15	0	0
" 19	0	3
" 24	3	0

I am not an amateur, but a farmer, cultivating one hundred and twenty-six acres in Lot 31 of the 2nd Concession, Township of Humberstone; but as a member of the Fruit Growers' Association of Ontario, I am very happy to be able to say that I do not think any man can lay out his money to better advantage than to become a member of that Association.

If these few simple statements of my method of fighting the curculio and of the results, are of any value to the fruit-growing public, they are welcome to them.

Jonas Neff.

Port Colborne, January, 1872.

Black Cap Raspberries.

The Fruit Growers' Association distributed to each of its members in 1871 a plant of the "Mammoth Cluster," one of the varieties of the above excellent fruit. I believe the cultivation of this species of the raspberry was first undertaken in the United States, and in that country this berry is becoming very popular; the kind under consideration has amongst its good qualities the advantages of being quite hardy, an immense bearer, and is nearly thornless. It is easily propagated by laying down the canes early in the

season and throwing a few inches of soil on them, they will not only root at the tips, but if covered at intervals, all along the stem.

The year I received my black raspberries I was enabled by this means to obtain *Twenty-four* new plants, and this year I could make a hundred if required.

These few facts may be of interest to some of the members of our Association, who are unacquainted with the habits of this variety, and are patiently waiting for it to "sucker," as is the case of the Antwerp family.

Such an one would require more patience than that possessed by the patient man of old, if he wanted to set out a twenty acre "patch" from the product of his humble beginningof the one distributed.

The best plants are made from the "tips," and from now until the second week in September is the proper time to arrange for propagation, and if the bushes are well grown and a number required, the shoots of this year should have been pinched about the middle of July to make them branch, and at this season, or when the tips of the canes show an unusual dark colour, and are bare of leaves, a few inches of soil should be thrown on them, and in a few weeks they will form good plants.

The branch which connects them with the parent stem should be cut after the leaves have fallen, leaving a foot or so on the tip end; this will mark the spot where it grows and it may thus be readily found in the spring, and transplanted into rows. These will not give fruit the first season, but will make a very healthy growth for next year's bearing.

From twenty five to fifty bushes will be found quite sufficient for an ordinary family. I have picked as much as six quarts of fruit from one bush which has been established for two years. The Mammoth Cluster is late in ripening, and the berries will come in a little later than the Antwerp family, and before the blackberry, making a valuable link in the small fruit season.

P. E. Bucke.

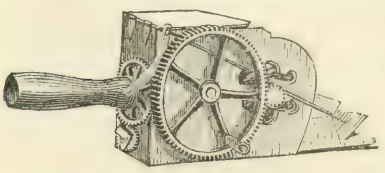
Ottawa, 5th Aug., 1872.

Horticultural Inventions.

It is always a matter for congratulation when any instrument is produced which lightens the burdens of human toil. Inventive industry has given to the agriculturist the reaper and the threshing machine, but beyond the rake, the hoe, and the wheelbarrow, but little has been done to help the labours of the horticulturist.

Recently the inroads of insect enemies and the blighting devastations of parasitic plants have borne so heavily upon the horticulturist, that it seemed as though he must give up the cultivation of some of his favourite fruits. More especially has the advent of the Gooseberry Sawfly, whose destructive habits have become well-known to every cultivator of the currant and gooseberry, brought consternation and trouble to many an amateur, who took a pride in supplying his table with an abundance of these wholesome fruits.

How, easily, and surely, to get rid of these pests, has been the prevalent inquiry. It was at length discovered that white hellebore applied in the form of a white powder to the leaves of plants, would poison the worms and cause their speedy death. But a simple, economical and rapid mode of applying the powder, so that it should be distributed evenly and thoroughly over the plants, was a desideratum which remained for inventive ingenuity to supply. Happily for those who suffer from these parasitic and insect pests this long felt want is now provided for, and we are enabled to place before our readers an engraving of an instrument which has been found to be just the thing for distributing powdered hellebore, sulphur, ashes, slacked lime, Paris green, &c., &c., in such a manner that there is not only no waste of these materials, but they are so applied as to secure the most efficient results.



This instrument is the invention of Mr. P. VanWagener, of Stony Creek, and is manufactured and sold by Messrs. Bauer & Geiss, of Hamilton. By means of this machine the operator is enabled to cover the plants with the desired powder while he is exempt

from the dust. As will be seen by examining the engraving, the instrument is a light portable box, which can be held in the left hand, while with the right hand the operator turns a small wheel. The revolution of this wheel gives a rapid motion to the fans within the box, which creates a strong air blast, that drives the powder, which is made to fall in the centre of the blast, forward from the operator and out of the box upon the plants. By this contrivance the discharge of the powder is continuous, rapid, and regular, and can be thrown in a horizontal direction, or upward, on the under side of the leaves, at the will of the operator. It is much more convenient and efficient than any contrivance in which the air blast is made by the operation of a bellows, and is said to be capable of discharging two hundred and fifty pounds of flour of sulphur in a day. We believe this little instrument, which weighs less than two pounds and a half, which any lad can carry without weariness and work with perfect ease, will prove to be a most efficient machine for the destruction of these insects and many forms of mildew.

The Striped Bug—How to Get Rid of it.

The best way to deal with the striped bug is to sit down by the hills and patiently watch for him. If you are spry, you can annoy him. This, however, takes time. It takes all day and part of the night If you get up before the dew is off your plants—it goes off very early—you can sprinkle soot on the plant, and soot is unpleasant to the bug. But the best thing to do is to set a toad to catch the bugs. The toad at once establishes the most intimate relations with the bug. It is a pleasure to see such unity among the lower animals. The difficulty is to make the toad stay and watch the hill. If you know your toad, it is all right. If you do not, you must build a tight fence round the plants, which the toad cannot jump over.—*My Summer in a Garden.*

Our Reports in England.

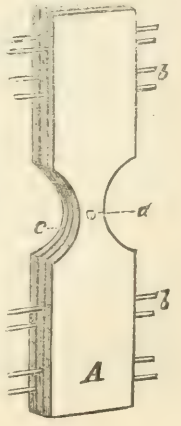
The Gardener's Magazine for 24th August, 1872, copies a portion of our last year's report on the "Horticultural Department at Washington," and thus gives a wider circulation to matters interesting to us, which but for the Annual Report would not have seen the light in Europe. The Editor heads the extract with the following notice :—

"HORTICULTURE IN AMERICA.

"THE HORTICULTURAL DEPARTMENT AT WASHINGTON.

"The following report of a visit to the Horticultural Department at Washington, by Mr. D. W. Beadle, Secretary to the Fruit-Growers' Association of Ontario, Canada, and published in the annual report of that Association, will probably be of considerable interest to a large number of our readers. Mr. Beadle is one of the leading horticulturists of the Province."

Thomas Wier's Patent Apple-Worm Trap.

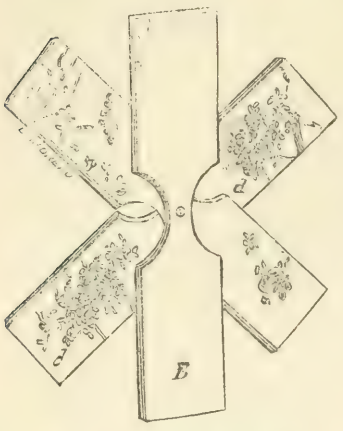


Mr. Thomas Wier, of Lacon, Ill., has hit upon a very simple device for alluring apple-worms, which is destined to play an important role in counterworking their injuries.

The trap (see figures *A* closed, *B* open) consists of two, three, or more thin pieces of boards, 12 to 20 inches in length, and 2 to 4 inches wide, with a screw (*a*) through their centre. The screw must be long enough to be firmly driven into the trunk of the tree, so as to hold the boards in position. The boards are cut out on each side of the screw, as at *c*., to facilitate their separation when fastened together by the silken threads of the worms, and to better expose the latter when the trap is opened.

The advantages of this trap so far outbalance the disadvantages that it may be considered the best we yet have. These advantages may be stated as follows : It is cheap, accessible to all, easily placed on the

tree, and removed again; wood forms, perhaps the most natural covert for the worms; the traps may be collected with little trouble, by the barrowful, submitted to a killing heat, in one way or another, and re-placed again; they may be used on the ground as well as on the tree. Its disadvantages are few. One it has, in common with all other snares or traps for this insect, namely, that it can never *exterminate* the Codling-moth, for many reasons that will suggest themselves to all who have any acquaintance with the insect. Another is, that where one trap only is used it can be attached to but one side of the tree, and in this single respect, notwithstanding all the theories of my friend Wier, it must always be inferior to any trap that encircles the tree.



The worms will spin their cocoons between the inner shingle and the tree as freely as between the shingles themselves, and I suspect that it will be found less tedious and cheaper to detach the traps and kill the worms by wholesale, than to open them on the tree. Those who prefer the latter method, will be pleased to learn of the means described by Mr. Wier, who says: "The quickest and best way to do this is to have a large tin pan bent in on one side, so as to fit closely to the trunk of the tree. When you reach the tree, drop upon your knees, place the depression in the pan against the trunk of the tree, hold it there by pressing your body against it, and you have both hands free to open the trap. When opening it, many of the pupæ or chrysalids will fall into the pan, and some of the worms. Kill the rest, or scrape them into the pan. The trap must be turned clear around, as many will be found between it and the bark of the tree. A person will open and kill the worms in from 400 to 800 traps in a day." I have known one of these traps to be so thoroughly torn to pieces by the Downey Woodpecker, that if they are to be preserved from year to year, it would be dangerous to leave them on the trees during winter.—*Riley's Report on Insects.*

Letter of Henry Moyle, of Paris, concerning an unusual variation occurring in the apple.

September 21st, 1872.

Dear Sir,—You may perhaps remember that, at the meeting of your association held at Hamilton early in 1871, Mr. C. Arnold, of Paris, exhibited an apple grown in my orchard, having the appearance of a russet of some variety, but from his report of the remarks by the members, they evidently doubted the correctness of his statement. I herewith send two specimens of the said fruit, picked by me this morning; they are grown on a tree grafted with Spitzenburgh. The natural fruit was a large green sweet apple, the graft was set over twenty years ago, and this is the third season I have seen this description of fruit on the same branch of that graft, and the only one on the tree that has any like it. That branch has always borne similar fruit, since I first noticed it about six years ago. The branch from which the apples were taken strikes off the main limb of the graft 18 inches, or two feet from where the scion was inserted. About the same distance from the beginning of the said branch apple No. 1 was picked, there were three just alike on a small spur; further up at top of the branch were eleven others, all like Nos. 2 and 3. I shall let them stay on the tree as long as I can, so that any person can see them if they desire to do so.

The first season I noticed them I showed the apple to my neighbour, Mr. Wm. Smith, who pronounced it a Bourassa. In the spring of 1871 I let Messrs. Smith, Arnold and Hamilton, have some grafts cut from that particular branch, to see what the product will be. There has not been time to ascertain that yet. I should have been pleased to meet you at your meeting next week, but cannot get down, being on the jury for the Assizes in Brantford.

I am, Sir, yours truly,

Henry Moyle.

LOWVILLE, NELSON TOWNSHIP.

MR. SECRETARY,—I feel it incumbent upon me to do the best I can to represent this locality in fruit growing.

THE CODLING MOTH,

With the exception of picking up or destroying the fallen fruit, has never been assaulted by strategy or force of arms. On this head, therefore, we have much to receive from, but little or nothing to impart to, the Association.

The moth is abundant and active in this neighbourhood. His operations are, for the most part, confined to those varieties of the apple that have a sweet or vinous flavour, such as the Tallman sweet Wine apple, Dominie, Rambo, Black Detroit, &c., &c. In this respect he shows his capacity for civilization; the wild crab being, if I mistake not his natural food. His notions of meum and tuum are likewise proofs of what civilization can effect for small as well as big bugs. Any one who has seen him poke his long politician nose with the utmost *nonchalance* into other people's affairs, puncturing without compunction what does not belong to him, must be convinced of this, and that the said curculio is a progressionist.

My pear trees, about 30 in number, all standards but one, have not yet fruited. Pear culture here is in its infancy. It, however, seems to promise well. I have not heard of any blight.

Plum culture, for a while abandoned, is reviving. A few years ago the knot made such havoc of all the old sorts that I rooted all out, and commenced de novo with the wild plum for stocks. I expect fruit next year, and also war with the "Little Turk."

The strawberry, most profitable for general market, seems to be Wilson's Albany, and its popularity may continue, till the taste of consumers is raised above the level of a strawberry, if large and cheap as a strawberry, and therefore sufficient for its place. I am cultivating a strawberry, said to be a seedling, sent me by a friend, that thus far seems about equal to the Wilson, in productiveness, and incomparably its superior in flavour.

It may not be out of place to mention my experience in gooseberry and currant culture, so far as it relates to the

CURRANT WORM.

I have three small plantations of gooseberries and currants; one where the fowls frequent, the others at a distance, where they never go. The former, in addition to being exposed to the visits of the fowls, have been treated to hellebore, &c. The worms on the distant plantations have been left to their own evil ways, and I believe have, in consequence, as is usual in such cases, come to grief. The facts added to the foregoing are as follows:—The first year of the advent of the worm all the bushes were about equally attacked, and the second, and the year before last the evil culminated in the bushes being nearly killed. Last year there was a marked diminution of the enemy upon the plantations, which were not reached by the fowls, nor "doctored" in any way. This year they have given me a most abundant crop. My opinion is, therefore, that if the worms are left to themselves the wolves and tigers of their own class will sooner or later restore the lost balance. That the fowls, and perhaps the poisons applied, destroy the said wolves and tigers, and thereby deprive us of our best, because "most natural allies in this war." My McLaughlin plum is doing well. The Hales early peach, by help of special treatment, and tonics, is beginning to show life.

I have the honour to be, yours, &c.,

S. P. MORSE.

REPORT ON PEAR CULTURE.

THE GRANGE, TORONTO, 17th June, 1872.

D. W. BEADLE, ESQ.,
Secretary, &c.

SIR,—As I may not be able to attend the Guelph meeting of the Fruit Growers Association in July, I write to say that though I have some three hundred pear trees

and fifty or sixty plums, I have suffered during the last three years, but very slightly, from pear blight or black knot—last year, which was fatal to pear trees in many gardens, I only lost one, and I attribute the absence of pear blight from my garden entirely to the use I have made of lime rubbish around each of my pear trees. Some two years ago I placed a wheelbarrow full of lime rubbish, got from an old building that was pulled down—the effect has been, I think, to sweeten the clay soil (mine is a heavy clay loam), which is, in some places, impregnated with iron—and it also, I think, gives strength to the trees to resist the effects of the blight. Last winter, which was very severe on trees, I only lost one pear, and that was transplanted last year.

I have treated my plums exactly as I have done my pears, and though I was troubled in all my young trees with the black knot before the application of lime, it seems entirely to have left my garden where the lime is used. If you think these observations of mine worth laying before the meeting for discussion, you can do so.

A friend of mine in Toronto lost last year ten or twelve of his finest bearing pears from blight, and when I showed him how I had escaped he agreed with me, thinking it was entirely due to the presence of lime.

I can account for the absence of blight and black knot in my trees in no other way.

I fear the vine you sent me was as dead as Othello himself; it shows no sign of reviving. Many of my native grapes in sheltered situations last winter were killed, whilst others in the open ground were all right in the spring. My peaches, under glass, lost all their bloom, or rather had none, but some under a wooden roof, where the sun could not get to them freely, do well.

My grapes in the vinery, well covered, have heavy loads of fruit. Mr. McPherson, I understand, lost all his peaches and vines, under glass.

Yours truly,

W. H. Boulton.

DIGEST OF ANSWERS RETURNED TO QUESTIONS SENT OUT BY THE FRUIT GROWERS' ASSOCIATION FOR THE YEAR 1872.

Replies were received from thirty-four counties, which are arranged in this digest in such a manner as to make the information obtained from them most readily available to those who may be intending to plant fruit trees in any part of the Province.

COUNTY OF BRANT.

Cherries.

The crop of Cherries this year has been on the whole quite equal to the average. The varieties grown are the Black Eagle, Black Tartarian, Mayduke, Bigarreau or Yellow Spanish, White Heart, Governor Wood, Common Red, Downer's Late Red, American Amber, Black Heart, Napoleon Bigarreau, Early Purple Guigne, Elton, Archduke, and Early May. The Napoleon Bigarreau is highly esteemed on account of its size and good quality: the Black Tartarian, Yellow Spanish, and Downer's Late Red, because they are very prolific: one tree of the latter sort bore 250 quarts this season. The black and red varieties seem to sell the best. Those sorts that ripen earliest are most attacked by the birds, though one gentleman remarked that the light coloured varieties were less subject to their attacks, and another, that the common red was the least troubled. No varieties wholly escape their attentions.

Raspberries.

The varieties grown are Brinckle's Orange, Black Cap, Philadelphia, Fastolff, Red and Yellow Antwerp, Franconia, Doolittle's Black Cap, Mammoth Cluster, Davison's Thornless, and Arnold's Orange King. Of these, the Brinckle's Orange, Black Cap, Philadelphia, Red and White Antwerp, and Mammoth Cluster are all named as being very prolific. The most hardy are the Doolittle's Black Cap, Philadelphia, Davison's Thornless, and Arnold's Orange King. The Mammoth Cluster has proved to be very pro

ductive; most think it to be very good and valuable: one thinks it lacking in flavour, and another does not think much of it. It is reported to be perfectly hardy by all who have had it long enough to test its hardihood, with the exception of Mr. John Arnold who says it is not hardy. The plants seem to be generally quite free from insects, occasionally the borer is mentioned, and an insect perforating and girdling the stalk so that it breaks off.

Blackberry.

The early Wilson Blackberry had been fruited only by a very few; one or two spoke well of it, but Mr. John Arnold said it was a humbug, and Mr. Grace calls it a nuisance. Two or three say it is hardy, but the majority speak of it as being quite tender.

Pears.

The following varieties are grown in this county:—Bartlett, Belle Lucrative, Winter Nelis, Flemish Beauty, Duchess d'Angouleme, Clapp's Favourite, Beurre d'Anjou, Beurre Clairgeau, Glout Morceau, White Doyenne, Vicar of Winkfield, Louise Bonne, Brandywine, Buffam, Beurre d'Amanlis, Beurre Langelier, Grey Doyenne, Dearborn's Seedling, Howell, Jargonelle, Lawrence, Madeleine, Osband's Summer, Seckel, Tyson, Clapp's Favourite, Swiss Bergamot, Henry the Fourth, and General Negley. But a few complain of having their trees injured by the blight this season. The varieties which suffered were the Flemish Beauty, Glout Morceau, Duchess d'Angouleme, and Winter Nelis. The weather previous to the appearance of the blight was very hot and dry; the trees in most cases made a good growth, though, in one instance, the growth was but little; the tree having been transplanted the previous year.

Apples.

The varieties grown are the Northern Spy, Gravenstein, Early Rose, R. I. Greening, Fameuse, Early Joe, Ribston Pippin, Maiden's Blush, Early Harvest, Red Astrachan, Baldwin, Newton Pippin, Esopus Spitzenburgh, Keswic Codlin, Roxbury Russet, Red Canada, Fall Pippin, Swaar, Golden Russet, Seeknofurther, King of Tompkins County, Pomme Grise, Talman Sweet, Autumn Strawberry, Yellow Bellefleur, English Russet, Hawley, Hawthornden, and Summer Queen. These only are mentioned, though some reply indefinitely that they grow a large number, even as high as a hundred varieties. Those spoken of as most esteemed are the R. I. Greening, because it is productive and saleable: Duchess of Oldenberg, Red Astrachan, and Primate for Summer; Gravenstein, Hawthornden, Keswic Codlin, St. Lawrence, Cayuga Red Streak, Alexander, Chandler and Golden Sweet for Autumn; Baldwin, Dutch Mignonne, Fameuse, Hubbardston Nonsuch, King of Tompkin's County, Norton's Melon, Northern Spy, Newtown Pippin, both the Yellow and Green, Ribston Pippin, Golden Russet, English Russet, Esopus Spitzenburgh, Westfield, Seeknofurther, Talman Sweet, Vandervere and Wagener for Winter; also Peck's Pleasant. The Codlin worm has generally been less injurious the past season. Very little effort has been made to destroy this insect, the only thing done by anyone has been to gather the fallen fruit. The straw rope trap has not been tried at all.

Plums.

The varieties cultivated are the Columbia, Washington, Jefferson, Lombard, Common Blue, Imperial Gage, Orange, Duane's, Purple, Diamond, Victoria, Brevoort's Purple, Prince's Yellow Gage, Red Magnum Bonum, Smith's Orleans, Pond's Seedling, Italian Damask, Green Gage, Coe's Golden Drop, Huling's Superb, Purple Gage, and Damson. They ripen in August, September, and October. The Lombard is the most productive of them all, and most esteemed as a market variety, though the Yellow Gage is named by several, and the Pond's Seedling and Duane's Purple are mentioned by a few as being profitable for market. The black knot is not very bad. The only remedy attempted has been that of amputation, which has partially succeeded. The Curculio has been less troublesome in some orchards than usual, while, in others, it has been quite abundant. Mr. Cowherd caught 1284 this year, commencing on the 30th of May and ending on the 7th of

June, by jarring the trees, which is the usual remedy practised, and in most cases is quite successful.

Eumelan Grape.

Several of the vines have died, one member had fruited it, and was pleased with its early ripening, and one had found it to mildew.

Strawberries.

They do not seem to be very subject to insects; two members spoke of a leaf roller that gave some trouble, and one replied that some years a small green worm on the under side of the leaf ate it full of holes, but he could not find it on the berries. It increased rapidly, and soon stripped a bed when once it began.

Frosts.

The fruit was not injured by Spring frosts. The first Autumn frost was on the 2nd October, and the first ice on the 11th October at Newport. At Cainsville the first ice in the last week in September. At Brantford, beans and tomatoes were unhurt October 7th and 10th, nor was there much injury before the 30th. At Mohawk, there was a slight frost on the 4th and 16th September, and on the 11th and 12th October ice formed. At Paris, dahlias were uninjured until the 11th October.

Winter.

At Mohawk the vines were injured. At Brantford, one member says the Isabella vines were badly winter-killed; and another, that several of his evergreens were ruined by continued western winds. Beyond this, there does not seem to have been much injury.

Shelter.

Mr. Cowherd planted a belt of White Pine in 1860 which now averages twenty feet in height, also a Willow Hedge on the north side now twelve feet high: but, planting for shelter is not at all general. A few have planted Norway Spruce and Scotch Pine.

Birds.

The Wax-wing Chatterer, Red-headed Woodpecker, Robin, and Catbird are mentioned by several, while others think the birds do more good than harm.

Fruit under Glass.

Jabez Rowe has a cold vinery and cultivates in it Black, Victoria, Golden, Muscat, and Purple Hamburg, Duchess of Buccleuch, Muscat of Alexandria, and Royal Muscadine, with other sorts planted this Spring. James Little, South Dumfries, has the Black Hamburg, Sweet Water, Black Prince, Canadian Chief, Golden Chasselas, and Black St. Peter: these bear full crops every year, but the Black Hamburg is the best for market.

COUNTY OF BRUCE.

Cherries.

The Common Kentish has been a good crop. The Kentish and Mayduke are those chiefly grown. The Mayduke is highly esteemed and promises to do well.

Raspberries.

Red and white sorts are cultivated, but the names are not known, and very little attention seems to have been given to this fruit.

Pears.

The Flemish Beauty, Beurre d'Anjou, Louise Bonne, White Doyenne, Brandywine, and Bartlett, are grown.

Apples.

Early Harvest, Vandevere, Red Astrachan, Sweet Bough, Duchess of Oldenburgh, Tart Bough, Fall Pippin, Fall Janetting, Gravenstein, St. Lawrence, Snow, Colvert, Golden Russet, King of Tompkins, Spy, Pomme Grise, Rambo, R. I. Greening, Rox Russet, Talman Sweet, Bailey's Sweet, Yellow Bellefleur, Hawthornden, Hubbardston's Nonsuch, Jonathan, Esopus Spitzenburgh, Maiden's Blush, Dominie, Westfield Seek-no-further, Twenty-ounce apple, and Ribston Pippin are grown.

Those most highly esteemed are the Red Astrachan, Sweet Bough, Duchess of Oldenburgh, St. Lawrence, Snow, Golden Russet, Hawthornden, Ribston Pippin, Jonathan, Maiden's Blush, Northern Spy and Roxbury Russet, because they all seem to be hardy, and to thrive well.

Plums.

Lombard, Washington, Yellow Egg, and Damson are grown; the Lombard is the most productive and most profitable for market. No Black-Knot and very little Curculio in this section.

Eumelan Grape.

Has not yet fruited, is hardy, and without any appearance of mildew.

Frosts.

The fruit was not injured by Spring frosts. On the 2nd, 14th and 15th September there was frost, but it did no injury.

Shelter.

Balsams and Pines have been planted on the north side of the orchard with success by John Hall, Pinkerton.

COUNTY OF CARLETON.

Raspberries.

The Am. Black Cap, Mammoth Cluster, Fastolff, Brinckle's Orange, Philadelphia, and White Antwerp are grown. Of these the Am. Black Cap and Philadelphia are the most productive, the Brinckle's Orange most esteemed for sweetness and high flavour. The Philadelphia and Black Caps are the most hardy.

Pears.

The Seckel, Flemish Beauty and Summer Bonchretien are grown; but little attention, however, seems to have been given to the growing of pears. The climate seems to be too severe for most sorts, some complaining that their trees die.

Apples.

The R. I. Greening, Pomme Grise, Colvert, Fall Jenneting, Red Astrachan, Baldwin, Fameuse, Hawthornden Gravenstein, Wagner and Golden Russet are grown about Ottawa. W. P. Taylor, at Fitzroy Harbour, says, the only variety he has had any success with is the Fameuse, and this success has been so unsatisfactory as to be almost a failure. "The trees suffer from frost, but worst of all, branch after branch dies from being diseased in a fork, bark blackened and extending over limb. I am now trying Red Astrachan, but this too suffers in winter, and has not yet fruited. Crabs alone appear to be hardy."

Plums.

The Lombard, Duane's Purple, Washington, Jefferson, Coe's Golden Drop, Yellow and Imperial Gage, Peach Plum and McLaughlin are grown,

The Lombard and Jefferson are the most productive.

Mr. Bucke says the Curculio is not known about Ottawa.

Frosts.

No injury done by late Spring frosts this year. The first frost at Ottawa was on the 5th October, when the thermometer fell to 32°. The second was on the 12th, the thermometer falling to 26°.

Winter.

The Elkhorn Cherry and Ribston Pippin Apple, and Evergreens were injured by the severity of the winter. Mr. Bucke says that his grape-vines were severely injured by the cold, although all were covered with earth. He lost one Telegraph, one Concord (the largest and healthiest vine in the garden,) and one Adirondac. The crop on those that survived was from one-half to one-third what it should have been. "My soil is a light, sandy loam, and though well underdrained, I think, when I compare notes with other vine-growers in this vicinity, the frost penetrates sand more than a well-drained clay soil."

Shelter.

No systematic planting for shelter seems to have been tried.

Birds.

Some say the Wax-wing and Red-headed Woodpecker, others that none are injurious, and wish they had more.

Fruit under Glass.

Black Hamburgh, Rose Chasselas, West's St. Peter, Royal Muscadine, and White Frontignan are grown.

COUNTY OF DURHAM.

Cherries.

At Tyrone and Bowmanville the crop was very deficient; at Millbrook and Cavan it was about an average. The varieties grown are Kentish, Gov. Wood, Black Tartarian, Napoleon, Yellow Spanish, Knight's Early Black, Elton and Downer's Late. The Napole n is esteemed because of its size, and Downer's Late, because it is an abundant bearer and ripens late. The earlier varieties are most eagerly sought by the birds.

Raspberries.

White and Red Antwerp and Franconia are grown. The Franconia is the most productive and hardy. Mr. Coleman, of Bowmanville, lost the Mammoth Cluster by the severity of the winter.

Pears.

The Bartlett, Flemish Beauty, White Doyenne, Louise Bonne de Jersey, Autumn Paradise, Duchess d'Angouleme, Onondaga, Winter Nelis, Vicar of Winkfield, and Summer Bonchretien are grown. No pear blight this season. Mr. Coleman, Bowmanville, never saw the blight in any of his trees.

Apples.

The Swaar, Fall Pippin, Alexander, Beauty of Kent, Cooper's Early White, Red Astrachan, King of Pippins, Snow, Spy, St. Lawrence, Spitzenburgh, Ribston Pippin, Talman Sweet, Sweet Bough, Wagener, Autumn Strawberry, Yellow Bellefleur, Roxbury Russet, Golden Russet, Pomme Grise, Golden Sweet, Summer Pearmain, Early Harvest, Duchess of Oldenburgh, Baldwin, Early Joe, Colvert, Fall Jeneting, Jersey Sweet, Porter, Pumpkin Russet, Fameuse, Green Sweeting, Jonathan, King of Tompkins County, Lady's Sweet, Monmouth Pippin, Newtown Pippin, Rawle's Janet, Rambo, Canada Reinette, R. I. Greening, Seek-no-further, Talman Sweet, Twenty-ounce, Winesap and Willow Twig are grown.

The Red Astrachan, Golden Russet, Snow, St. Lawrence, Spy, King of the Pippins, Alexander and Greening, Duchess of Oldenburgh, Early Harvest, and Colvert, are most es-

teemed because of their productiveness, hardihood, and good quality of fruit, either for cooking or dessert.

The Codlin worm has been very bad in many parts of the county this season, and injured the fruit greatly. No effort has been made to destroy either the moth or worm.

Plums.

The Magnum Bonum, Egg Plum, Peach Plum. Washington, Smith's Orleans, Green Gage, Prince's Yellow Gage, Columbia, Lombard, Imperial Gage, Reine Claude de Bavay, Coe's Golden Drop, McLaughlin, Orange Plum, and Jefferson are grown. The Green Gage, Smith's Orleans, Yellow Egg, Reine Claude de Bavay and Columbia are the most productive, and the Lombard, Columbia, Smith's Orleans, Washington, and Yellow Egg are the most profitable. Little or no Black-Knot. John McLaughlin says that he is able to control the black-knot by cutting it off as early in the season as it appears, and that Prince s Yellow Gage has not shown any symptom of the knot for the past fifteen years. The curculio has not been very troublesome in this County, and is easily kept within bounds by jarring the trees, and keeping poultry under them.

Frosts.

The apples were injured at Millbrook by a frost the first week in June. At Bowmanville the cherries were all destroyed, except Kentish and Downer's Late Red. Plums and apples injured, but not so severely. The first frosts that injured vegetation were from the 11th to 14th October.

Winter.

The grape vines were about three-fourths killed back last winter, and the blossom buds of the plum were nearly all killed. Mr. McLaughlin had four trees of the Swaar, and two of the Greening badly injured by frost in March.

Shelter.

The spruce and balsam have been planted in a few instances for shelter.

Birds.

The Wax-wing, Robin, Woodpecker and Blue Jay are thought to be injurious.

COUNTY OF ELGIN.

Cherries.

The crop was hardly an average this year. The Mayduke, Kentish, Gov. Wood, Elton, and Black Heart are grown. The Kentish is highly esteemed because of its productiveness and hardihood. The early sorts are subject to be eaten by birds.

Raspberries.

The Philadelphia, Franconia, Naomi, White Antwerp and Black Cap are cultivated. The Philadelphia is most productive, and with the Black Caps the most hardy. Not much subject to insects.

Blackberry.

The early Wilson seems to be hardy, and the fruit large and good, well worthy of cultivation.

Pears.

The Duchess d' Angouleme, Louise Bonne de Jersey, Bartlett, Seckel, Madeline, Brandywine, Swan's Orange, Osband's Summer, Sheldon and Buffam are grown. The blight has not been serious the past season. The Madeleine and Steven's Genesee suffered most from blight, the weather was very wet in June, dry in July and the blight appeared in August. The trees grew about ten inches the previous season.

Apples.

The R. I. Greening, Golden Russet, Cayuga Red Streak, Spitzenburgh, Rambo, Red Astrachan, Baldwin, Talman Sweet, Smoke-house, Snow, Keswick Codlin, Golden sweet and all the leading varieties.

Of these the R. I. Greening is very valuable on account of its productiveness and good quality, the Red Astrachan commands better prices than other apples of the same season, and the Baldwin keeps and sells well. The Codlin Moth has been more than usally injurious the past season, and nothing seems to be done to lessen their numbers.

Plums.

The Lombard, Coe's Golden Drop, Jefferson, Damson, Yellow Egg, Washington and Imperial Gage are grown. The most productive are Lombard, Washington and Imperial Gage, and hence the most profitable. The Black Knot has not been troublesome. The curculio is destroyed by jarring and killing, and the result is a good crop of plums.

Eumelan Grape.

One member says that it is quite hardy, and another that it was very subject to mildew; proved the most tender out of seven sorts and finally died.

Frosts.

At Mount Salem there was frost from the middle to the 20th of May which destroyed the Grapes, Peaches and Plums, and the Apple suffered. This also was the case at Union. Elsewhere in this County there seems to have been no injury from spring frosts. In the fall the first frosts that injured vegetation occured from the 27th September to the 10th October.

Winter.

The Isabella was killed at Port Stanley, some Delaware at Mount Salem: Isabella and Rogers No. 3 killed at Union.

Shelter.

A few are planting Pines and other trees for shelter.

Birds.

The Wax-wing, feathers of which were sent to the Secretary, is very destructive to cherries, raspberries and blackberries. Some, however, thought that though the birds devoured fruit they were on the whole more serviceable than injurious.

COUNTY OF FRONTENAC.

Cherries.

The crop was bad this year. The Kentish is the variety mostly grown.

Raspberries.

The White and Red Antwerp, Brinckle's Orange, Philadelphia, and Clarke and Black Caps are grown. The Doolittle, Mammoth Cluster and Clarke are the most productive. The Mammoth Cluster is good and productive, and tolerably hardy. Injuries from insects are but slight.

Blackberry.

The Early Wilson seems to be very tender.

Pears.

The Bartlett, Louise Bonne, Flemish Beauty, Seckel, Steven's Genesee, and some others are grown. The Louise Bonne, Duchess d' Angouleme, Beurre d' Anjou and

Glout Morceau suffered badly this year from a frost which occurred on the night between the 4th and 5th of June, causing the fruit to drop off. Trees made very little growth during the summer of 1871, and less in that of 1872, owing to the drought.

Apples.

The Golden Russet, Fameuse, Spy, R. I. Greening, Wagener, Early Harvest, St. Lawrence, Pomme Grise, Ribston Pippin, Red Astrachan, and many others are grown. Of these Golden Russet, Snow, Spy and St. Lawrence are most esteemed because they sell readily. The Codlin moth is troublesome and on the whole worse than during former years. No pains have been taken to destroy the insect.

Plums.

The Egg Plum, Orleans, Pond's Seedling, Coe's Golden Drop, Imperial Gage, Blue Plum and Washington are grown. These all do well at Kingston. The Black Knot has been very troublesome, the only remedy attempted has been cutting out, but not always with success. The curculio has been troublesome, but jarring the trees has been quite successful in capturing the insect and securing a crop of fruit.

The Eumelan Grape

Has been fruited by Francis H. Horsa, and he says that "the bunches are loose and irregular." I exhibited it and obtained a first prize at our County Show. The flavour is certainly superior—finer than Rogers No. 9, sweet and pure, much admired by all who tasted it. The only drawback is the smallness of the bunches and berries. Perhaps these will improve, if so, it will be a beautiful grape." His vine bore thirty bunches. The vine seems to be hardy, fruit ripened fully by the 20th September, and there was no appearance of mildew.

Frosts.

The Autumn frosts commenced the first week in October ; up to that time there had not been any to injure vegetation about Kingston.

Shelter.

Cedar and Maple trees have this year been planted along the roads by the Township Council. Note. This is a step in the right direction, and well worthy of imitation by every Township Council in the Province.

Birds.

The Wax-wing, Robin, and Woodpecker are named as injurious to the fruit grower; but Mr. Hosra says:—"We want more birds, and penalties stringently enforced against those who destroy them. Birds are the only truly effectual insect exterminators. The cabbages have been greatly destroyed around here this year by the caterpillar of the Pontia Rapiæ, which has quite swarmed. In England, the natural enemy of this insect is the Titmouse, Parus Cœruleus. Could not the F. G. Ass. turn their attention to this, and devote some of their funds to the importation of the titmouse and some of the other soft-billed birds —the Robin, Hedge-creeper, and others? They might, perhaps, prove hardy enough to stand the winter in the County of Essex, and along the shores of Lake Erie, and would, probably, in time, become migratory in their habits, wintering in the South, and revisiting us in the spring, when we mostly want them. I have no faith in any attempt of man being able to check the growth of insect life."

Fruit under Glass.

One gentleman says he grows Grapes and Peaches under glass but does not name the sorts.

COUNTY OF GREY.

Cherries.

This fruit is not very generally cultivated. Those who have trees said the crop was light. The Kentish, Mayduke, Belle de Choisy, and Reine Hortense are grown; the Mayduke is preferred.

Raspberries.

The Clarke, Red and White Antwerp, Mammoth Cluster are grown. The Antwerp and Mammoth Cluster are the most productive. All are hardy enough, if covered with snow during the winter.

Blackberry.

But few have planted the Early Wilson. Those who have it say that it is hardy.

Pears.

The Brandywine, Flemish Beauty, Louise Bonne, Duchess d'Angouleme, Beurre Diel, Seckel, Vicar of Winkfield, Bartlett, Buffam, Lawrence, Glout Morceau, White Doyenne, Oswego Beurre, Winter Nelis, and Beurre d'Anjou are grown. The pear is but sparingly cultivated, and not much is known about the pear blight.

Apples.

The Twenty-ounce Pippin, Rambo, Baldwin, R. I. Greening, King of Tompkin's County, Bellefleur, Fall Pippin, Golden Russet, Colvert, Ribston Pippin, Snow, St. Lawrence, Kentish Fillbasket, Rox Russet, Early Harvest, Red Astrachan, Esopus Spitzenburgh, Keswic Codlin, Spy, Fall Jeneting, Gravenstein, Vandervere, Chandler, Blue Pearmain, Maiden's Blush, Tart Bough, Alexander, Colvert, Monmouth Pippin, and Pomme Grise, are grown. Of these, Early Harvest and Red Astrachan are most esteemed for summer; Snow apple for early winter. The Vandevere is a heavy and regular bearer, and excellent keeper. R. I. Greening bears and keeps well, and the Baldwin is a good bearer. The Codlin moth prevails very injuriously in some parts of the County, while in other parts it seems not to be known. Nothing seems to be done in the way of destroying them.

Plums.

The Bingham, Bleeker's Gage, Coe's Golden Drop, General Hand, Imperial Gage, Lawrence's Favourite, M'Laughlin, Yellow Egg, Washington, Bradshaw, Lombard, Smith's Orlean's, Pond's Seedling, Victoria, Duane's Purple, Jefferson, Columbia, Saint Catherine, Magnum Bonum, and Green Gage, are grown. Of these, the most productive are the Lombard, Yellow Egg, and Coe's Golden Drop; and the Yellow Egg, Lombard, Washington, and Columbia are the most profitable. The Black Knot is not troublesome, nor the Curculio.

The Eumelan Grape.

Ripened the 12th September; think well of the fruit; not subject to mildew; generally found to be hardy.

Frosts.

No late spring frosts this year. On the 28th Sept., a frost killed potato and pumpkin vines at Clarksburgh. In Collingwood Township, frost injured foliage on the 15th September. Generally, however, there were no severe frosts before the 10th October.

Winter.

Robt. J. Smith, of Owen Sound, lost one-third of his apple trees by the cold. At Clarksburgh, the peach trees had their fruit buds killed. The Delaware Grape, at Owen Sound, was injured.

Birds.

The Wax-wing, Robin, and Woodpecker eat the cherries and small fruits.

COUNTY OF GLENGARRY.

Cherries.

Very few are grown, and these do not seem to bear.

Raspberries.

The Mammoth Cluster is the only one mentioned, and this seems to be hardy, and not subject to insects.

Pears.

The Flemish Beauty, Beurre Clairgeau, and Beurre d'Anjou are the only sorts named. The Flemish Beauty is spoken of as hardy.

Apples.

The Red Astrachan, Snow, and Alexander are named, and seem to be quite hardy. The Red Astrachan commences to ripen about the 15th August. The Codlin Worm has been worse than usual this year.

Plums.

The Imperial Gage, Jefferson, Green Gage, and M'Laughlin are cultivated.

Frosts.

No injury this year from spring frost. The first frost occurred the 2nd and 3rd Sept., but did no injury; the next on the 3rd or 4th Oct.

Winter.

The Concord, covered with potato tops, was killed by the winter, while the Delaware, Ontario and Isabella, covered in the same way, escaped.

COUNTY OF GRENVILLE.

Cherries.

The crop this year has been poor: the Mayduke and Morello are the only kinds that will stand the winter.

Raspberries.

The White and Red Antwerp, Clarke and Philadelphia are grown, the latter being the most productive and the most hardy.

Pears.

The Flemish Beauty, Beurre d'Anjou, Lawrence, Sheldon, Onondaga, White Doyenne, Bartlett, Beurre Hardy, Louise Bonne, Belle Lucrative, Winter Nelis, Washington, and Osband's Summer are cultivated

Apples.

The Red Astrachan, Fameuse, Bourassa, Ribston Pippin, Golden Russet, Pomme Grise, William's Favourite, Duchess of Oldenburgh, Gravenstein, Baldwin, King of Tompkins County, Porter, Spy, Swaar, Canada Reinette, St. Lawrence, Dyer, Early Harvest, Talman's Sweet, Spitzenburgh, and Blue Pearmain are grown. Preference is given to the Duchess of Oldenberg and Early Harvest; because they are not injured by the Codlin Worm, and are rroductive. The Codlin worm has destroyed nearly all the apples near Prescott this season. Gathering up the fallen fruit is the only means used of destroying this worm.

The Eumelan Grape.

Fruited this year for the first time. Vine hardy and free from mildew.

FROSTS.

The fruit crop was not injured this year by late spring frosts.

WINTER.

The severe cold of last winter injured the Duchess of Oldenburgh, Golden Russet and Baldwin. The bearing limbs were killed.

SHELTER.

Mr. James Irwin has planted a willow hedge, which answers a good purpose.

COUNTY OF HALDIMAND.

CHERRIES.

At Cayuga the crop has been good; in other places poor. The varieties grown are the Bigarreaus and Dukes and the Kentish. The earliest varieties are most subject to attacks of birds.

RASPBERRIES.

Red and Yellow Antwerp and Philadelphia are grown.

PEARS.

Louise Bonne. Flemish Beauty and Seckel are cultivated. Also Sheldon, Ananas d'Ete, Beurre d'Anjou, Winter Nelis, Albertine, Onondaga and Belle Lucrative.

APPLES.

All the leading varieties are grown, the Spy and Spitzenberg are most esteemed. The Codlin worm is about as usual.

PLUMS.

The Black Knot has not been very troublesome, and is kept in check by cutting it out as soon as it appears. The Curculio has not been as bad as usual this season.

THE EUMELAN GRAPE.

Is perfectly hardy and free from mildew.

FROSTS.

No late spring frosts this year. The first in the fall was on the 1st September and only injured the corn in low black turfy land.

WINTER.

Rogers No. 19 was badly cut down; also Hartford and Concord. Rogers Nos. 3 and 15 were not much injured.

SHELTER.

The White Pine has been planted for shelter.

COUNTY OF HALTON.

CHERRIES.

The crop seems to have been hardly an average. The Kentish, Mayduke, Elton, Reine Hortense, Black Tartarian, American Heart, and Gov. Wood are grown. The common Kentish is much esteemed because it is hardy and reliable, and the Am. Heart for fine flavour. The birds attack all sorts, especially the Governor Wood.

Raspberries.

The Yellow Antwerp, Fastolff, Black Caps, Clarke, Kirtland, Catawissa, Philadelphia, Franconia, Brinckle's Orange, Purple Cane, Mammoth Cluster, Davison's Thornless, and Golden Thornless. The most productive are the Franconia, Fastolff and Black Caps. The Fastolff and Black Caps are reported to be the most hardy. No serious injury from insects.

Blackberries.

The Early Wilson bears well and the fruit excellent. It killed back considerably last winter.

Pears.

Duchess d'Angouleme, Beurre Clairgeau, Sheldon, Bartlett, Glout Morceau, White Doyenne, Louise Bonne, Doyenne Sieulle, Steven's Genesee, Easter Beurre, Beurre d'Anjou, and Flemish Beauty, are grown. Not much pear blight this year.

Apples.

The R. I. Greening, Baldwin, Rox Russet, Golden Russet, Spitzenburgh, Phœnix, Spy, Nonsuch, Fall Pippin, Gloria Mundi, Red Astrachan, Beauty of Kent, Rambo, Ribston Pippin, Colvert, Talman Sweet, Seek-no-further, Dominie, Gravenstein, Early Harvest, Swaar, Bellefleur, Twenty-ounce Pippin, Snow, Holland Pippin, Sweet Bough, Keswic Codlin, Alexander, Hawley, Hawthornden, St. Lawrence, Maiden's Blush, Wagener, and Dutch Mignonne are grown. Those most esteemed are the Early Harvest and Red Astrachan, Keswick Codlin, Fall Pippin, Gravenstein, Baldwin, very productive. R. I. Greening, the best, considering quality and productiveness. Spy, good bearer, but specimens variable in quality. Seek-no-further keeps well. Russets hang well on the tree and sell well. The Codlin worm is very bad in some parts of the county, while in other parts less injurious than usual. The hogs are let in to eat the fallen fruit, and this seems to be all that is attempted in the way of lessening the number of this pest.

Plums.

The Washington, Jefferson, Lombard, Imperial Gage, Yellow Gage, Common Blue Damson, Wild Red, Magnum Bonum, Huling Superb, Duane's Purple are grown. The most productive are the Lombard and Magnum Bonum, and these are the most profitable for market. The Black Knot does not seem to be very troublesome: the remedy used is cutting out the knots. The curculio is not very abundant generally; those who have been most troubled have found jarring the trees a quite sure method of securing a fine crop of plums.

The Eumelan Grape

Has been fruited and thought to be a very fine sort.

Frosts.

The fruit has not been injured by late spring frosts, except a few grapes injured on 23rd of April. On the 12th October the first severe frost occurred.

Winter.

Ontario and Rebecca Grape vines killed to the ground. Adirondac, Diana, Isabella Catawaba and injured so that they did not bear. Hartford Prolific and Salem also injured, but bore some fruit. Clinton, Delaware and Concord not injured to any extent. All Cherry trees except the Kentish injured so that they did not bear full crops. The Peach blossoms were killed. Israella also injured. The Quince trees alsosuffered.

Shelter.

The White Pine is planted, and Maple, and White Spruce.

BIRDS.

Woodpeckers, Robin, and Wax-Wing eat the Cherries and small fruits.

COUNTY OF HASTINGS.

CHERRIES.

The Cherry crop has not been good the past season. Only the common red and black sorts are grown.

RASPBERRIES, BLACKBERRIES and PEARS are not much grown. There was no blight on the Pear trees this year, but there was some last year.

APPLES.

The Spy, Golden Russet, Snow, Talman Sweet, Pippins and Wagener are grown. The Spy, Golden Russet and Wagener are much esteemed for their superior flavour and fineness. The Codlin Moth has been less injurious this season than usual, though no means seems to have been used for destroying the moths or worms.

PLUMS and GRAPES are not much grown, and no insects injure the Strawberries in plant or fruit.

FROSTS.

The first Autumn frosts occurred on the 4th and 9th of October, but did no material injury.

SHELTER.

There seem to have been no trees planted for shelter.

COUNTY OF HURON.

CHERRIES.

The crop has been on the whole very good. The Mayduke, Black Tartarian, White Heart, Early Richmond, White French Guigne, Ne-Plus-Ultra, Black Heart and Kentish are the varieties mostly grown. The Black Tartarian does admirably, the fruit is of first quality, and the Napoleon Bigarreau is very prolific; the Ne-Plus-Ultra is a seedling grown by John Mosely, of Goderich, and said by him to be very productive, and ten days later in ripening than any other sort. The Mayduke also is much esteemed. The early varieties are most liable to be eaten by birds. The White French Guigne is not attacked by birds.

RASPBERRIES.

The Red and White Antwerp, Brickle's Orange, Franconia, Philadelphia, Mammoth Cluster, are grown. Of these the Red Antwerp seems to be the most productive and this and the Philadelphia the most hardy. The Mammoth Cluster has been fruited by H. Hale, Clinton, who says it is good but inferior to the Antwerp. J. Mosely, Goderich and H. Hale, say it is hardy. A. M. Ross, Goderich, complains of the depredations of a small green worm, similar to that on Currants, completely eating the leaves.

BLACKBERRY.

The Early Wilson has proved hardy thus far, but has not yet been fruited.

PEARS.

The Flemish Beauty, Buffam, Bartlett, Beurre d' Amanlis, Belle Lucrative, Duchess d' Angouleme, Vicar of Winkfield, Golden Beurre, Beurre Diel, White Doyenne, Louise Bonne, Steven's Genesee, Swan's Orange, Howell, Beurre d' Anjou, Jargonelle, Seckel, Cushing, Dearborn's Seedling, Oswego Beurre and Glout Morceau are grown. The blight has been more severe on the whole the past season than usual. The Flemish Beauty Beurre d' Amanlis, Vicar of Winkfield, Bartlett, Steven's Genesee, Louise Bonne de

Jersey and the Glout Morceau have suffered most. The weather previous to the appear, ance of the blight, was hot and dry. The two seasons previous had been both hot and dry-consequently the growth of the trees was moderate and the wood well ripened.

Apples

The Early Strawberry, Primate, Early Harvest, Rambo, Sweet Bough, Snow, Pomme Grise, Wagener, Vandevere, Greening, Swaar, Porter, King of Tompkins, Baldwin, Hubbardston's Nonsuch, Hawley, Pomme Royal, Spy, Red Astrachan, Duchess of Oldenburg, Ribston Pippin; Golden Russet, Roxbury Russet, Romanite, St. Lawrence, Danver's Winter Sweet, Twenty Ounce, Yellow Bellefleur, Beauty of Kent. American Summer Pearmain, Hawley, William's Favourite, Maiden's Blush, Drap d' Or, Gravenstein, Alexander, Minister, Belmont, Esopus Spitzenburgh, Canada Reinette and Melon are grown. Those most esteemed are the Red Astrachan, Primate, Sweet Bough, Porter, Hawley, Pomme Royal, Snow, Pomme Grise, Baldwin, Hubbardston's Nonsuch, Ribston Pippin, Gravenstein, Greening, Spy, Golden Russet, Roxbury Russet, Early Harvest and St. Lawrence. The Ribston Pippin grown at Goderich by John Mosely, is there a long keeper, he has had the fruit sound and fresh and in full flavour as late as the 20th of August. The Codlin Moth has been more injurious in some orchards than last season, in others less. A. M. Ross has tried no other means of destroying this insect than carefully gathering up the fallen fruit, others do not seem to have tried any means whatever.

Plums.

The Lombard, Bingham, Jefferson, Conger's Scarlet, Washington, Goliath, Ickworth's Imperatrice, Victoria, General Hand, Pond's Seedling, Huling's Superb, McLaughlin, Bradshaw, Green Gage, Smith's Orleans, Imperial Gage, Bleeker's Gage, Royal, Diamond, Reine Claude de Bavay, Denniston's Superb, Peach Plum, Damson, Orange and Lawrence's Favourite are grown. The most productive and constant bearers are the Lombard, Smith's Orleans, Pond's Seedling, Victoria, Reine Claude de Bavay, Washington and McLaughlin. The Lombard is mentioned, with Smith's Orleans, Washington and Lawrence's Favorite as being most profitable. The Black Knot seems to be just making its appearance and has not been very troublesome. The remedy tried has been cutting it out as soon as it appears. The Plum Curculio made its appearance about Goderich three years ago and is increasing, but is not very general as yet through the County. Mr. Ross practises jarring the trees and succeeds in securing a good crop of Plums. No others speak of trying this means of catching the insect. Mr. Ross complains that the *Rot* in his Plums is much worse than the curculio and that he lost about half of his Plums the past season from this cause.

The Eumelan Grape.

Mr. Ross and H. Hale have fruited it and both think highly of it. Mr. Ross says it is a great bearer, perfectly hardy, no signs of mildew, good flavour and ripens early and esteems it the most promising of the new grapes.

Frosts.

Mr. Mosely is the only person who thinks there was any injury from frost. He says that the buds of the Apple were materially injured by the dry frosts of January and February, and the frosts in the latter part of April.

At Goderich the first frost was about the middle of September but did no harm ; at Clinton the first severe frost was on the 8th of October, while Mr. Ross had grapes and plums yet hanging in his garden as late as the fifth of November, uninjured by frost.

Winter.

The fruit trees were not injured by the past winter, but some Antwerp Raspberries at Clinton were killed.

Shelter.

Not much attempted in the way of planting trees for shelter.

Birds.

The Wax-Wing and Woodpeckers are complained of by some; others think that on the whole they are more beneficial than injurious.

COUNTY OF LAMBTON.

Cherries.

The Heart and Bigarreau varieties do not seem to thrive very well, being generally killed by the frosts of winter; the common Kentish does the best, but the crop was not very good the past season.

Raspberries.

The Philadelphia, Clarke, Miami, Black Cap, Purple Cane, Brinkle's Orange, White Antwerp and Mammoth Cluster are grown by a few, but the cultivation of this fruit is very generally neglected, the wild varieties being abundant in many parts. Of these the Philadelphia, Clarke, Purple Cane and Black Caps are hardy; the Philadelphia is very productive on sandy soil, the Black Caps on clayey loam. The Mammoth Cluster has been fruited only by a few, they think it good and hardy.

Early Wilson Blackberry

Does not seem to be perfectly hardy, though generally passing through the winters without serious injury. But very few have fruited it.

Pears.

The Bartlett, White Doyenne, Flemish Beauty, Dix, Grey Doyenne, Louise Bonne, Beurre Clairgeau, Duchess d'Angouleme, Buffam, Beurre d' Anjou, Tyson, Oswego Beurre, Easter Beurre, Jargonelle, Pound, Vicar of Winkfield, Seckel, Brown Beurre, Belle Lucrative, Lawrence, Prevost, Leon le Clerc of Lavalle, Winter Nelis, Graslin and Beurre Diel are grown. No blight reported at all from this County.

Apples.

The Early Harvest, Red Astrachan, Snow, Fall Pippin, Baldwin, R. I. Greening, Golden Russet, Keswick Codlin, Early Strawberry, Colvert, Ribston Pippin, Esopus Spitzenburgh, Pomme Grise, Vandevere, Winter Pearmain, Swaar, Spy, Cayuga Red Streak, Wagener, Roxbury Russet and many others are grown. Those most esteemed are the N. Spy, Baldwin, Fall Pippin, Esopus Spitzenburgh, Yellow Bellefleur, Hubbardston's Nonsuch, Wagener, Roxbury Russet, Snow, Red Astrachan, R. I. Greening and Golden Russet. The Codlin Moth has been more injurious this season and in some places very numerous. Nothing is done to destroy them.

Plums.

The Blue Plum, Washington, Green Gage, Red Magnum Bonum, Smith's Orleans, Frost Gage, Damson, Imperial Gage, Yellow Egg and Columbia are grown. The most productive are the Columbia and Blue Plum. But very little seems to be done in the way of marketing the fruit. The Black Knot is scarcely known. The Curculio has not been as bad as usual the past season. Jarring the trees and destroying the insects seems to be very generally practised and with good results.

The Eumelan Grape.

Has proved to be hardy and free from mildew with T. C. Wheately, Sarnia, but small in bunch and berry. A. Vidal, Sarnia, says, his vine was injured by the winter. James Watson, Birkhall, thinks it inferior to many of the other kinds of Grape. J. Oxenham, Kertch, says it is hardy and free from mildew, bunch small, berry sweet.

FROSTS.

Fruit was not injured by Spring frosts, except Cherries and Apricots, at Sarnia, on the 13th of May. The first frost at Sarnia and at Corunna was on the 4th of September, but did not injure anything. The fir t that injured Tomato plants, Dahlias and Balsams at Sarnia, on the bank of the river, occurred between the 23rd and 24th of October, further from the water it was noticed as early as the 10th of October. At Wyoming, the Melon Vine was yet green on the 8th of October. At Kertch the first frost is reported to have occurred on the 7th of October. Near Corunna, Tomato plants were still green on the 14th of October. At Ravenswood the first frost sufficiently severe to kill cucumbers occurred on the 17th of October.

WINTER.

The Peach Trees, Concord Grape, Isabella, Catawba, and Rebecca and Quince Trees are mentioned as having been injured the past winter.

SHELTER.

The common Thorn has been used as a hedge and shelter with good success. The White Pine and Cedar have been planted, also the Spruce. James Watson says that tree planting has not received the attention that its importance demands. Last winter opened the eyes of farmers to this fact. Fall wheat in sheltered situations gave forty bushels to the acre, whereas in exposed situations it was so badly killed as to amount almost to a failure.

BIRDS.

Woodpeckers, Wax-Wing and Robin are mentioned as injuring the fruit, especially eating the cherries.

COUNTY OF LANARK.

CHERRIES.

For a number of years have not been a large crop. Spring frosts injure the blossoms. Even Wild Cherry Trees bear very little fruit.

RASPBERRIES AND BLACKBERRIES.

These have grown abundantly in the woods and around the fields, and the finer varieties have not been cultivated.

PEARS.

Have not been successfully cultivated. The failure is, perhaps, in part at least attributable to carelessness in the selection and cultivation.

APPLES.

The Codlin Moth has been very troublesome for some years about Smith's Falls, and appears to be increasing and spreading over all this section of country.

PLUMS.

The Egg Plum, Blue Plum and Green Gage are cultivated. These are all productive, except when injured by spring frosts. None raised for market. A few trees have been killed by Black Knot. The Curculio has for the last two years somewhat injured the fruit.

FROSTS.

The Plums were injured by the spring frosts, being frozen in the blossom.

SHELTER.

Charles McNab, Smith's Falls, says that his orchard, until the fires which in the fall of

1869 devastated a great portion of this section, was sheltered by a natural forest on the West, North and North-West sides. Since that time several trees have died, so far as I can judge, from the removal of the shelter. He planted a small orchard two years ago, and a double line of trees of the Sugar Maple for shelter on the West and North sides.

COUNTY OF LEEDS.

Apples.

The Snow, Talman Sweet, St. Lawrence and Seek-no-further are cultivated. The Snow s the most productive and hardy, being well adapted to this locality.

Plums.

The Red Magnum Bonum is cultivated, ripening in the beginning of September.

The Eumelan Grape

Thrives well.

COUNTY OF LENNOX.

Cherries.

The Cherry crop has been very deficient this year. The Mayduke and Black Cherry are cultivated. The Black Cherry is the most highly esteemed. The Mayduke is the more subject to be eaten by the birds. There are no varieties the birds do not attack.

Plums.

The Blue Plum and Green Gage are grown. The Blue is the most productive and most profitable for market. The Black Knot infests the trees. The following remedy has been tried by William Fry, Millhaven, and found by him to be successful, viz., a salve made of native sulphur, sulphuric acid and lard. This applied, after cutting off the excrescence, by covering the wound with the sulphur salve. The Black Knot would occasionally break out, but one or two applications of the ointment stops it.

Winter.

The Raspberry Canes and the branches of apple trees have been injured by the cold during the past winter.

Shelter.

The Maple and Locust are planted in the neighbourhood of Millhaven for shelter.

Birds.

Robins and Yellow Birds devour cherries and currants.

COUNTY OF LINCOLN.

Cherries.

The crop has been very good. The Kentish, Coe's Transparent, Mayduke, Elton, Black Eagle, Bigarreau, Black Tartarian, and all other sorts thrive well. Those named as being most highly esteemed are Gov. Wood and Coe's Transparent for table, Black Tartarian and Bigarreau for market; Kentish for cooking; for eating Belle de Choisy and Knight's Early Black. John W. Ball, Niagara, mentions a good seedling cherry which he cultivates, and says it is a fine cherry, a good bearer and does not rot. The birds take the sweet and early varieties. The firm-fleshed cherries are the least subject to their attacks.

Raspberries.

The Black Caps, Red and Yellow Antwerp, Davison's Thornless, Mammoth Cluster, Doolittle, Philadelphia, Clarke, Fastolff, Franconia, Brinckle's Orange and many other sorts. The Black Caps, Brinckle's Orange, Fastolff, Franconia and Philadelphia are among the most productive. The most hardy are the Black Caps; next to these stand the Franconia and Philadelphia. The Mammoth Cluster is one of the most productive and largest of the Black Cap family. No insects found troublesome.

Blackberry.

The Early Wilson is sufficiently hardy to thrive well, but has not yet been long enough in cultivation to ascertain its true value.

Pears.

All varieties thrive well, except that the trees are generally subject to the pear tree blight, which, however, was not very bad the past season. The Glout Morceau seems to be the most subject to blight. The weather has been dry and hot for the two past seasons, and the wood growth has been well ripened.

Apples.

All the leading varieties are grown, and do well. The Early Harvest, Red Astrachan and Early Joe are most esteemed for summer use; for fall and early winter, the Duchess of Oldenburgh, Gravenstein, Fall Pippin, Melon, Snow Apple and Ribston Pippin; for winter use, the R. I. Greening, Baldwin, Esopus Spitzenburgh, Mother, Swayzie Pomme Grise, Golden Russet and Roxbury Russet. The Codlin Worm is very injurious, and on the whole is increasing in numbers and the extent of its ravages. Very little is done to lessen their numbers, beyond allowing the pigs to run in the orchards. Dr. Cross has been trapping them with cloths wound around the trees for the past two seasons, but does not yet experience any beneficial effects, though he has in this way caught and destroyed large numbers.

Plums.

Every variety can be grown; but they thrive best on well drained, clayey soils. The Black Knot has been exceedingly troublesome, and many have lost all their trees from this disease. The Curculio also is very abundant, usually ruining the crop, unless some pains is taken to jar the trees, and capture and kill the insects. Those who have adopted this course have uniformly succeeded in raising good crops of plums.

The Eumelan Grape.

Is quite hardy and free from mildew. The fruit is of medium size, and generally well liked, though not thought to be equal to the Delaware. M. Y. Keating, Jordan, says that nearly all of the previous season's growth was killed by the frost last winter. The Delaware also suffered more from frost last winter than they have at any time since 1864.

Frosts.

The fruit was not injured by spring frosts. The first fall frosts, that did any injury at Grimsby, occurred on the 24th of October. Light frosts on the 15th, 16th and 18th September, at Jordan, but not severe enough to injure anything. At Niagara, frost was seen the first week in October, but no injury was done. In Grantham, there had been no frost sufficient to injure anything up to the 17th October. At Smithville, there was frost on the 16th September and on the 26th, but caused no injury.

Winter.

The Balsam Fir Trees were injured, and many grape vines; even those esteemed very hardy.

Shelter.

The Norway Spruce, White Pine, White and Yellow Willows and Elm, have been planted to a limited extent.

Birds.

The Woodpecker, Turkeys, Robin, Wax-Wing and Blackbirds eat cherries, grapes and apples. M. Y. Keating says, two years ago an immense number of robins collected in my vineyard, and destroyed about 1,500lbs. of grapes in one day, and even picked up what grapes had dropped on the ground. The grapes that year were full of a kind of maggot in the seed, which I have not seen since. The robins destroyed them, too.

COUNTY OF MIDDLESEX.

Cherries.

The crop was hardly an average, though the Kentish were tolerably abundant. The Yellow Spanish, Mayduke, Black Tartarian, Kentish, Governor Wood, Napoleon Bigarreau, Black Eagle, Rockport Bigarreau, Belle de Choisy, Belle Magnifique, Elton, Coe's Transparent, Late Duke, Early Purple, Reine Hortense, Morello and Early Richmond, are cultivated. Those most highly esteemed are the Early Richmond, Mayduke, Late Duke, Elton, Rockport Bigarreau; the first on account of its uniform productiveness and excellent qualities for cooking and preserving; the second and third are of finer quality, but not so uniformly productive good when fully ripe, either for cooking or dessert; the fourth and fifth as dessert cherries, especially the fourth. The Black Heart is also well spoken of. The early and sweet sorts are most subject to be eaten by birds, but none entirely escape. The Butner's Yellow escapes the best of any, but it is a fruit of poor quality.

Raspberries.

The Philadelphia, Doolittle, Mammoth Cluster, Davison's Thornless, Golden Thornless, Franconia, Red and Yellow Antwerp, Brinckle's Orange, Clarke, Orange King and Hornet, are cultivated. The Philadelphia and Clarke, *red*, Brickle's Orange, *white*, and Mammoth Cluster, *black*, are the most productive. The most hardy are the Philadelphia, Clarke, Doolittle and Mammoth Cluster W. Saunders, London, says the Mammoth Cluster is by far the best of the Black Cap Raspberries; Dr. Landor, London Asylum, says it is little better than wild ones; Wm. Sutherland, that it is better than the uncultivated, only for sending to a distant market; A. Francis, Delaware, says he likes it much, having large fruit productive and quite hardy; G. G., Hamilton, Ailsa Craig, says it is a humbug.

Blackberry.

The Early Wilson was fruited by Mr. Saunders, who thinks it a very fine berry, but much of the crop was destroyed by a species of fly, which punctured the fruit and fed on its juices. Dr. Francis finds it very large and good, but not hardy.

Pears.

The Rostiezer, Beurre Dose, Bartlett, Flemish Beauty, White Doyenne, Grey Winter Doyenne, Louise Bonne, Stevens' Genesee, Dix, Seckel, Swan's Orange, Theodore Van Mons, Beurre Diel, Duchess d'Angouleme, Kingsessing, Winter Nelis, Brandywine, Urbaniste, Lawrence, Jargonelle, Beurre Clairgeau, Buffam, Vicar of Winkfield, Tyson, Glout Morceau, Benne d'Anjou, and many other sorts are grown. Not any blight reported during the past season.

Apples.

All varieties thrive well. The sorts most esteemed are the Red Astrachan, Keswic Codlin, Duchess of Oldenburgh, Porter, Baldwin, Snow, King of Tompkins, Spy, Pomme Grise, R. I. Greening, Golden Russet, Twenty Ounce, Early Harvest, Esopus Spitzenburg, Yellow Bellefleur and Fall Pippin. The Codlin Worm has been troublesome in many orch-

ards, and seems to be on the increase. Nothing is done in the way of destroying either the worms or moths other than gathering up the fallen fruit.

Plums.

The following varieties are cultivated, viz.:—

Lombard, Victoria, Smith's Orleans, Green Gage, Imperial Gage, Washington, McLaughlin, Bradshaw, Lawrence's Favourite, Yellow Egg, Huling's Superb, General Hand, Reine Blanche, Coe's Golden Drop, Bingham, Guthrie's Apricot, Pond's Seedling, Yellow Gage, and Duane's Purple.

The most productive are:—

Lombard, Victoria, McLaughlin, Imperial Gage, Washington and Yellow Egg, in the order given and the following are the most profitable:—Lombard, Victoria, Washington and Yellow Egg, because they are *large* as well as productive.

The Black-Knot has not been very troublesome. The Curculio has not been very abundant the past year, though some complain that they are plenty. Those who have practised jarring the trees regularly secure good crops of fruit.

The Eumelan Grape.

G. G. Hamilton, Ailsa Craig, says it is the best hardy Grape he has tested; had nearly twenty bunches this season; that it is free from mildew, but did not stand the frost of the last two winters. Dr. Francis, Delaware, reports no mildew, but the vines killed to the ground last winter. A. C. Attwood, Vanneck has found it hardy thus far. Alexander Gould, London, says it is worthless as a hardy Grape, not being hardy. John B. Taylor, London, says it is quite hardy, a very nice flavoured Grape, likes it next to Delaware, better than Concord, Isabella, or Roger's. Charles Stead, London, had forty bunches on his vine, pinched off ten of the poorest, the berries not large, about the size of the Diana, flavour good, but disappointed in the size of the bunches; ripe the 25th of September, stood the winter well, no mildew this year but some last.

Frosts.

The fruit was not injured by Spring frost, except that the cherries seemed in a few places to have suffered. Slight frost about the 30th August, at Ailsa Craig, and on the 2nd, 3rd, and 14th September. The first frost to injure vegetables was on the 28th September. At Delaware, the first frost was on the 1st October. At Appin, the first frost occurred on the 3rd and 4th September. Near Glencoe the first severe frost was on the night of the 10th October. At London the first severe frost occurred on the 19th October.

Winter.

The Diana, Adirondac, Isabella, and Roger's Nos. 15 and 4 Grapes, Orange Raspberry, Moorpark Apricot, Bigarreau Cherry, the blossom buds of the Peach, the Delaware, Salem, Iona, Concord, Hartford Prolific, and Eumelan Grape, and Wilson Blackberry were injured by the winter. The Philadelphia Raspberry slightly injured.

G. G. Hamilton, Ailsa Craig, says:—

"As I was much absent, in the fall, from home, I concluded not to cover up the Grape vines, but give them a fair trial. The result was as follows:—Early in April the wood of the Eumelan seemed fresh, and, to all appearance, alive up to about 1st May, excepting the small extremities. Subsequently the wood blackened and I had to cut down to within six inches of the ground to get living wood. The growth of the shoots has been most vigorous since, several of them as much as from ten to twelve feet, by last of July. There are from 15 to 20 bunches of fruit, which is double the size of that of last year now. (31 July.)

"The Isabellas, in open ground, were cut down to the ground, no fruit at all. The Isabella against the seven foot, nearly as bad, has two small bunches of fruit, had fruit last year destroyed by early fall frost during my absence. The Concord in the open ground has had a partial injury, having had the fruit buds killed on the higher portion of the wood excepting two or three, but has several fine bunches near the ground. A nursery agent some three miles

west of this tells me that his Hartford Prolific, Isabella, and Clinton are not in the least injured, but the Delaware is; they have no shelter but are on high ground, clay soil. An Isabella, some six years planted on the eastern side of and trained to a dwelling, and having a stem of over two inches thick was cracked with the frost to the ground and completely killed above the surface, but came up feebly from the root some time in June. I trimmed some of the leaves of a portion of a Clinton trained against said seven foot fence on beginning of July and a quantity of the fruit mildewed when trimmed.

"The Eumelan ripened later than in 1871, although my other sorts were earlier. This I attribute to the vine having been killed close to the ground, so that all the fruit came from shoots within six inches of the surface. Did not ripen before the 20th September, the fruit was as large as a medium sized Concord.

Shelter.

White Pine, White Willow, Maple, and Norway Spruce, Arbor Vitæ, and Balsam Fir, are planted by a few, but not much attention has been paid to the planting of trees for shelter.

Birds.

Mr. Saunders says:—

"The Robin is the greatest scoundrel, a most unmitigated rascal; eats almost everything that is good, especially strawberries, cherries, grapes, and plums—Waxing hard on cherries." Others complain of the Wax-wing, Catbird, Brown Thrush and Woodpecker.

Fruit Under Glass.

The following varieties of Grapes are mentioned as being cultivated:—The Black Hamburgh, Chasselas Musque, Duchess of Buccleuch, Golden Chasselas, Golden Champion, Buckland's Sweet Water, Bowood Muscat, Muscat Hamburgh, Royal Muscadine, Grizzly Frontignan, Black St. Peter, Muscat of Alexandria, Champion Hamburgh, Syrian, Victoria Hamburgh, Deacon's Superb, Wilmot's Hamburgh, Rose Chasselas, Lady Downe's, Black Frontignan, and Muscat Otonell.

COUNTY OF NORFOLK

Cherries.

The crop was very poor. The varieties most esteemed are the Black Tartarian, and Elton. The birds take most of the sweet Cherries, but attack all.

Raspberries.

The Philadelphia is grown.

Pears.

Many trees have been killed by the blight, though it was not prevalent the past season.

Apples.

Many varieties are grown, so that there are Apples the whole year round. The most esteemed are the Red Astrachan, Sweet Bough, Hawley, Gravenstein, Fall Pippin, Swaar, Tompkin's County King, Spy, and Golden Russet. The Codlin Worm has not been any more injurious the past season than usual. No pains are taken to destroy it.

Plums.

The Common Plum is the only variety named. There has been some Black Knot the past summer; the only remedy resorted to is cutting it off. The Curculio is reported not to be very abundant; nothing done to kill them.

FROSTS.

Fruit crop not injured by Spring frosts.

COUNTY OF NORTHUMBERLAND.

CHERRIES

Have been an average crop. The Common Black English is cultivated and esteemed on account of its hardiness and productiveness.

RASPBERRIES.

The Yellow Autwerp, Brinckle's Orange, and Doolittle's Black Cap are grown; the two latter are the most productive. the Black Cap the most hardy, but a covering of snow is quite sufficient for any. J. W. Johnston, Campbellford, has fruited the Mammoth Cluster and thinks highly of it; a strong grower and productive.

PEARS.

The Bartlett, Flemish Beauty, Jargonelle, Louise Bonne. and Vicar of Winkfield, are named. No blight.

APPLES.

Red Astrahcan, Early Harvest, Sweet Bough, and another early variety got for Red Canada, which I think is probably Benoni, but cannot be sure. Primate, Keswick Codlin, Duchess of Oldenburg, St. Lawrence, Alexander, Pomme Royal, Gravenstein, Fameuse, Ribston Pippin, Hawthornden, Lowell, Baldwin, Bellefleur, King, King of Tompkin's Co., Melon, Northern Spy, Pecks Pleasant, Pomme Grise, Rambo, Rome Beauty. Canada Reinette, Rhode Island Greening, Golden Russett, Roxbury Russett, Swaar, Tallman Sweetin, Twenty Ounce, and others are grown. Those most esteemed are RedAstrachan, hardy, bears well, fruit large and fair, and sells readily; Primate, hardy, good bearer, excellent quality; Duchess of Oldenburg, St. Lawrence and Alexander, hardy, good bearers, and good market fruit; Fameuse hardy, good bearer and good fruit, but is sometimes spotted; King of Tompkin's Co., Northern Spy, Rhode Island Greening, and Twenty Ounce, because they are good for market; and Golden Russet, Rome Beauty, and Talman Sweet.

The Codlin is reported not prevalent.

PLUMS.

The Lombard, Yellow Egg, Washington, and Bleeker's Gage, are grown. The three first are the most productive; no Black Knot. The Curculio has been abundant this year, and they capture a good many under chips and boards placed under the trees for them to hide under.

THE EUMELAN GRAPE.

J. W. Johnston, Cambellford, has fruited it: quality good, but grapes small and bunch loose; it was protected during the winter; not subject to mildew.

FROSTS.

The fruit was not materially injured by Spring frosts. The first severe frost was on the 17th October. at Campbellford; at Burnbrae the first frost that did any damage was on the 12th of October.

WINTER.

The Adirondac Vines were injured at Campbellford where the snow did not cover them, also the Delaware, Creveling, Rogers' 15 and Iona. At Burnbrae, the Gravenstein. King of Tompkins County, Spy, Rhode Island Greening, and Swaar, suffered partially in the branches.

Shelter.

Arbor Vitæ is planted by a few.

Birds.

The Woodpecker, Blue Jay, and Robin, commit depredations on the fruits.

COUNTY OF ONTARIO.

Cherries.

At Oshawa, Whitby, and Brooklin, there was a good crop; at Beaverton and Whitevale, none. John White and John McGill, Oshawa, report no crop. The Kentish or Common Red, Elton, Black Tartarian, Black Eagle, Mayduke, Yellow Spanish, Governor Wood, and Elkhorn are grown. The Elton is much esteemed for its flavour, productiveness and hardiness. The Kentish is also much valued on account of its hardihood and cooking qualities. The birds attack all varieties.

Raspberries.

The Franconia, Philadelphia, Brinckle's Orange, Red Antwerp, Doolittle Black Cap, Davison's Thornless and Mammoth Cluster, are grown. The most productive are the Philadelphia and Davison's Thornless. The most hardy are the Philadelphia and the Black Caps. John McGill likes the Mammoth Cluster very much, and finds it hardy. Isaac French, Oshawa, has fruited it, and finds it hardy, but prefers Davison's Thornless.

Blackberry.

Mr. French has fruited the Early Wilson, and says it is a fine large berry, but plant not hardy. John White says it was cut down to the ground by frost, prefers the fruit to that of the Kittatinny.

Pears.

The Flemish Beauty, White Doyenne, Duchess d'Angouleme, Osband's Summer, Bartlett, Beurre Clarigeau, Beurre d'Anjou, Tyson, Louise Bonne, Howell, Sheldon and Brandywine are grown. The blight is troublesome here also, though not as bad as in many other counties.

Apples.

The Baldwin, Spy, King of Tompkins, Snow, Yellow Bellefleur, Maiden's Blush, Colvert, Fall Pippin, Red Astrachan, Sweet Bough, Early Harvest, Talman Sweet, Rambo, Golden Russet, R. I. Greening, Sour Bough, Early Red Streak, Early Joe, Alexander, Fall Janeting, Holland Pippin, Woodstock Pippin, Golden Greening, Red Romanite, Esopus Spitzenburg, Spy, Seek-no-further, Swaar, and many others. Those most highly esteemed are R. I. Greening, Early Harvest, Spitzenburg, Spy, Duchess of Oldenburgh, Red Astrachan and Fall Pippin. The Codlin worm is becoming very injurious, and nothing is done to destroy the insect.

Plums.

The Green Gage, Lombard, Monroe Gage, Washington, Bleeker's Gage, German Prune, Yellow Gage, Yellow Egg and Bradshaw, are cultivated. The most productive are the Lombard and Washington. There seems to be but very little Black Knot, the only remedy is amputation. The Curculio is not very troublesome, and only one person says he jars the trees and catches them.

Frosts.

The fruit crop was injured by frosts late in April, and by bleak east winds. The first severe frost at Oshawa was on the 17th October, but did no injury to fruit. At Beaverton, the first frost was on the 3rd of October, no damage; on the 20th October it froze hard.

Winter.

Wilson's Early and Kittatinny Blackberry were killed to the ground. Strawberry plants badly killed; the Clinton Grape Vine partially killed back at Whitby.

Shelter.

Not much has yet been done in the way of shelter; a few Maple, White Willow and White Spruce have been planted.

Birds.

The Robins, Wax-Wing and Woodpeckers are mentioned as injurious.

COUNTY OF OXFORD.

Cherries.

The crop was good. The Kentish, Blackheart, Mayduke, and Elton are grown; the Mayduke is esteemed for its flavour, earliness and productiveness. The birds attack all sorts.

Raspberries.

The Mammoth Cluster, Davison's Thornless, Philadelphia, and Clarke, are grown. All these seem to be hardy. J. G. Mitchell, Nissouri, esteems the Mammoth Cluster very highly and finds it quite hardy. No insects on the plants.

Pears.

The Dutchess d'Angouleme, Louise Bonne, Tyson, Belle Lucrative, White Doyenne, Sheldon and Bartlett are grown. No blight this season.

Apples.

The following varieties are grown:

Early Harvest.
Early Strawberry.
Red Astrachan.
Sweet Bough.
Fall Orange.
Fall Pippin.
Fall Janeting.
Alexander.
Snow Apple.
Hawthornden.
Colvert.
Golden Sweet.
Maiden's Bush.
Keswick Codlin.
Gravenstein.
Seek-no-further.
Ribston Pippin.
Monmouth Pippin.
Wine Sap.
King of Tompkins Co.
Baldwin.
Winter Greening.
Winter Swaar.
Yellow Bellefleur.
Talman Sweet.
Spitzenburgh.
Roxbury Russet,
Northern Spy, Golden Pippin.
Gilly flower, Romanite.
Twenty Ounce.

The Codlin Moth has not been as bad as last season.

Plums.

The Duane's Purple, Lombard, Washington, Yellow Gage, Orange, Yellow Egg, and Green Gage are cultivated. The Lombard is the most productive and profitable for market. The Black Knot has not been very troublesome. The Curculio has arrived; no report of any attempts to catch it by jarring the trees or otherwise.

Frosts.

Fruit not injured by Spring frosts.

Winter.

No trees or vines reported injured by the cold during the past winter.

Shelter.

The Lombardy Poplar and Balsam Fir have been planted to a limited extent for shelter.

Birds.

The Wax-Wing and Robin are destructive to fruit.

COUNTY OF PEEL.

Cherries.

The crop at Credit was a poor one, at Halton, good. The Yellow Spanish, Napoleon Bigarreau, Kentish, and Black Heart are grown. The Napoleon Bigarreau is esteemed for its productiveness, the Kentish for its hardihood. The birds eat all sorts.

Raspberries.

The Franconia, Fastolff, Red and Yellow Antwerp, Brinckle's Orange, Hornet, Doolittle's Black Cap, and Mammoth Cluster are grown. The most productive are the Red and Yellow Antwerp. The Black Caps are the most hardy.

Blackberries.

The Early Wilson has proved thus far to be tolerably hardy, more so than the New Rochelle or Lawton.

Pears.

The Bartlett, Flemish Beauty, Louise Bonne, Madeline, Vicar of Winkfield, Sheldon, White Doyenne, Bell Pear, and Belle Lucrative are grown. No blight.

Apples.

The Baldwin, Borassa, Spy, R. I. Greening, King of Tompkins, Wine Sap, Rambo, Ribston Pippin, Holland Pippin, Colvert, Snow, Red Astrachan, Early Harvest, Golden Russet, Red Canada, Fall Pippin, Maiden's Blush, and others are grown. Those most highly esteemed are the Early Harvest, Baldwin, R. I. Greening, Spy, Golden Russet, Snow, and Fall Pippin. The Codlin Worm has on the whole been less injurious than usual. No efforts made to kill them.

Plums.

Coe's Golden Drop, Yellow Gage, Yellow Egg, Red Magnum Bonum, Green Gage, Purple Gage, Imperial Gage, and Blue Plum are grown. The most productive are the Yellow and Purple Gages, and the Blue Plum, and likewise most profitable for market. The Black Knot is most severe in the Blue Plum; the only remedy tried has been excision. The Curculio has not been as bad as usual. Fine crops are had, whenever jarring the trees, and destroying the Curculio has been energetically tried.

The Eumelan Grape.

Judge Scott, Brampton, thinks the vine only tolerably hardy, free from mildew, has not fruited. O. Hammond, Credit, thinks the fruit very good; the plant hardy and free from mildew.

Frosts.

The fruit was not injured by spring frosts at Brampton; at the Credit the grape crop was injured; at Halton, there was a heavy frost on the 25th of May, which did some damage. and at Richview the apple crop suffered severely. The first fall frost injuring tomato and potato vines occurred in October.

Winter.

Judge Scott says:—Fruit trees not injured unless the fruit-buds may have been affected.

Grape vines planted in Spring of 1871, and left entirely unprotected were all, except one. killed to the ground. The exception was a Creveling (one of two). The other Creveling was killed altogether, and 2 Concords,—2 Roger's 19,—1 Adirondac,—1 Roger's 15,—1 Hartford Prolific,—1 Brant,—1 Israella and 1 Eumelan, all grew up pretty well from the root. the Israella being by for the strongest and best vine. One Delaware grew up, the other was killed outright, and one Cornucopia was killed outright and the other is barely living. Among all these it is difficult to say which is best but the Cornucopia appears in this one instance, to be the least hardy of the lot.

O. Hammond says: Yes, the out-door grapes were many killed and others injured. Delaware, Concord and Rebecca killed; Diana and Hartford injured; Sweet Bough Apple injured, No other injuries reported.

Shelter.

Judge Scott says:

1. There is but little tree planting for shelter here. So far as my observation extends, the White Pine appears to require the least trouble and give the best results of any of the evergreens.

Mr. Thomas Ramage, Richview, remarks that tree planting for shelter is practised by myself: I planted a single row of White Pine 8 years ago, the plants were from 4 to 5 feet high, they are now from 12 to 16 feet high.—I planted them 3 feet apart. They would do very well 5 or 6 feet apart. Last spring I planted 100 pines, nothwithstanding the dry summer, I only lost about 15 per cent of them; they do best in grass. The grass serves as a mulch. I plant as follows: Pare the grass off the surface where the tree is going to be planted, then dig the hole sufficient to receive the roots beat the bottom of the bed into a perfect tilth 4 in. or 5 in. deep; pack the roots carefully with fine mould, then mulch over with the grass pared off: in all cases have a portion of the original soil removed with the tree—plant in the Spring, when the young wood has shot out about half an inch; not before. I do not find it much more difficult to grow pine than any other tree. It is beginning to be practised in the neighbourhood.

Birds.

The Wax Wing, Robin, Crow, and Woodpecker, are reported as injurious to the Fruit Grower. Judge Scott says:—"We have so many sportsmen (?) here, that there are not many birds left to give trouble." He also adds that he would like to see the culture of the pear much more general than it is here; good early varieties being, I think, the most desirable. A possible peach would be a great boon, and the best market small fruits would be an advantage.

COUNTY OF PERTH.

Cherries.

The crop has been good. The Black Eagle, Yellow Spanish, Kentish, Belle Magnifique, Early Richmond, Carnation, Mayduke, Reine Hortense, and Black Heart are grown; the Black Eagle on account of its flavour, the Mayduke for size and flavour, Kentish and Belle Magnifique for cooking and yield. The birds attack all, especially the sweet and early sorts.

Raspberries.

The Knevet's Giant, Philadelphia, and Clarke, are grown. The Clarke is reported the most productive. The Philadelphia the most hardy, the Clarke nearly as hardy, but the Knevet's Giant somewhat tender. The Mammoth Cluster has been fruited by S. H.

Mitchell, St Marys, two seasons. He finds it perfectly hardy and an enormous bearer; it stands drouth and heat the best of any he has tried, altogether the most satisfactory of any. He says Davison's Thornless is also very productive and about a week earlier, but the fruit and clusters are smaller. No insects observed.

Pears.

The Beurre Koenig, Doyenne du Comice, Prevost, Pratt, Belle de Noel, Lawrence, Beurre Millet, Forelle, Bartlett, Glout Morceau, Easter Beurre, Beurre Diel, Duchesse d'Angouleme, White Doyenne, Louise Bonne, Osband's Summer, Seckel, Rostiezer, Flemish Beauty, Belle Lucrative, Vicar of Winkfield, Kingsessing, Graslin, Pound, Verzouzier, Delices de Hardenpont of Angers, Doyenne d'Ete, Beurre Giffard, Supreme de Quimper, Ananas d'Ete, Beurre d'Anjou, Beurre Langelier, Leon le Clerc of Lavalle, Onondaga, Beurre Clairgeau, Eliot's Early, Bloodgood, Buffam, Howell, Madeline, McVean, Beurre Superfine, Bezi de Montigny, Beurre d'Amanlis, Sheldon, Nouveau Poiteau, and Brandywine, are grown. There has not been much blight this season.

Apples.

The Duchess of Oldenburg, Ribston Pippin, Red Astrachan, E. Harvest, Golden Sweet, Sweet Bough, Colvert, Spice Sweet, Snow, 20 oz. Pippin, Gravenstein, Fall Pippin, Monmouth Pippin, Baldwin, Rhode Island Greening, Wine Sap, Talman Sweet, King of Tompkins County, Golden Russet, Seek-no-farther, and many other sorts are grown.

S. H. Mitchell says he prefers the Astrachan the best early, for hardiness, beauty, productiveness, and healthiness, as it has no equal and it will bring a higher price in market than any other early kind.

The Gravenstein, Snow Apple, Fall Pippin, R. I. Greening, Rox Russet, and N. Spy, for size, cooking, and keeping qualities, are mentioned by others.

John Dutton, Stratford, says he prefers the Red Astrachan—thrifty grower, free bearer, and fine fruit; Fameuse—hardy, good bearer, fine fruit; Hawthornden—immense bearer, and splendid cooking apple; Garden Royal—good, though not productive, good fruit; Hawkins Pippin I value as much as any I have grown, strong, stocky, upright grower, early and great bearer, annually covered with immense fruit, very solid, weighing from 10 to 16 oz. each; St. Lawrence—good in all points, fine fruit; Maiden's Blush—good bearer; Jonathan—a beautiful apple, very productive.

The Codlin Worm has been very injurious the past season. Nothing has been done to destroy the moths or worms other than gathering up the fallen fruit.

Plums.

John Dutton, Stratford, says:—(We are here essentially in the plum section of the country, they do splendidly, and I make a speciality of them.)

Bingham, English Magnum Bonum, Reine Claude de Bavay, Smith's Orleans, Imperial Gage, Green Gage, Bradshaw, McLaughlin, Lombard, Victoria, Washington, Lawrence's Favourite, Guthrie's Apricot, General Hand, Pond's Seedling, Mediterranean, Jefferson, Monroe Gage, Oullin's Green Gage, Brandy Gage, Denniston's Superb, Golden Esperin, De Montfort Transparent, Orange, Prince Engiebert, Columbia, Beaty's Green Gage, Guthrie's Late Green, Angelina Burdett, Surpasse Orleans, Belgian Purple, Early Purple, Bryanstone Gage, Lucombe's Nonsuch, and Duane's Purple, besides some fine seedlings, are grown.

Bingham and Reine Claude de Bavay do not rpipen generally before they are hurt with the frost, but are good for cooking and preserving.

Lombard, Bingham, Reine Claude de Bavay, Magnum Bonum, but in fact all trees bear too heavily; McLaughlin generally sets its fruit nicely separated, consequently always fine.

If for market in the immediate neighbourhood, the largest varieties find the best and quickest sale, as Washington, Magnum Bonum, Bradshaw, &c., but for a distance Lombard, Smith's Orleans, &c.

Have never seen but one small branch affected with Black Knot, which I immediately cut out; the tree (a McLaughlin) was in poor soil, and a settlement of water from the overflow

of a drain close to it. I manured the tree, and this year it is full of fruit. I am of the opinion that a wet, undrained soil, gives a tendency to Black Knot. Have examined two places in this locality, the one where the trees were all crowded together, not more than six feet apart, in a piece of wet soil—every tree was covered with Black Knot; in the other the trees were planted in a low, wet lot, which had open drains about a foot deep, which, when I saw were running, with water, which proved the soil must have been saturated with moisture; and all the trees were badly affected.

Last year I observed a number of plums falling off a Reine Claude. Upon examination observed a crescent-shaped puncture in each; the next morning spread a sheet and jarred the tree, found three curculio. Not a plum dropped from the tree afterwards. I never saw any before or since; they do not appear to be known here.

Frosts.

No injury this year to the fruit crop from spring frosts. Mr. Dutton says the first fall frost was on the 20th of August, but without injury to fruit. Mr. Colley, St. Marys, mentions the 7th September as the date of the first fall frost. No injury.

Winter.

Mr. Colley lost his Isabella vines; Concord and Clinton do well with him. Mr. Mitchell says the Rogers No. 19, was the most injured; Clinton and Hartford somewhat.

Shelter.

Mr. Mitchell has planted a hedge of Lombardy Poplars, and finds them of great benefit. Mr. Bradley says:—"We plant the Scotch fir, larch, English Ash, Basswood, Soft Maple, Black Italian poplar, and sundry others, but few or none are planted by the neighbours.

Birds.

The Woodpecker, Wax Wing, and Robin, eat cherries and small fruits.

Fruit under Glass.

Mr. Dutton and Mr. Mitchell say they have cold vineries in which they grow the Black Hamburg, Muscat of Alexandria, White Syrian, Chasselas, and Sweet Water.

Gooseberries

John Dutton says:—

I wish to remark in reference to Gooseberries that I grow the English varieties without difficulty. *I have never had a case of mildew yet.* They bear well, and in the green state being twice as large as the American Seedlings, and easily picked: are much preferred in my family for domestic use. Again, the "imported Gooseberry saw-fly larva" (Nematus Ventricosus) is much easier kept down on them. I am so well satisfied with the past five years' experience, that I have thrown out all my Houghton seedlings, &c. This season I have had more than I required for my own use. My culture is as follows:—

Soil good, but rather stiff clay loam, well enriched with stable manure, and a top dressing of lime.

Cultivation.—I train my bushes on a single stem, planted in *the open ground, the bushes well separated from each other*, so as to secure a free ventilation of air. I believe this to be the secret of success. I have observed (in this town) even the American seedlings badly mildewed; they were planted close together, and under the shelter of apple trees.

Varieties.—On this head I can give no precise information. My trees (two sorts) were purchased from Messrs. J. Bruce and Co., of Hamilton, some years since; a large red sort and a smaller green, samples of which I forwarded to D. W. Beadle, Esq., your esteemed secretary.

J. R. Jarvis, Esq., of this town, has succesfully grown them for some years past, and had a large supply this season. He obtained his bushes from England; names unknown. J. Hamilton, Esq., has grown some very large fruit on young bushes planted last fall, I believe.

COUNTY OF PETERBORO'.

Cherries.

The Elton, Black Tartarian, Early Richmond and Elkhorn are cultivated.

Raspberries.

The Yellow Antwerp, Franconia and Brinckle's Orange are cultivated, the latter is the most productive, and all are equally hardy.

Pears.

The Beurre d'Anjou, Bartlett, Doyenne d'Ete, Flemish Beauty, Steven's Genesee, Sheldon, Howell, Osband's Summer and Washington are grown. There has been some blight the past season; the Osband's Summer, Washington and Stevens' Genesee have suffered most.

Apples.

The Red Astrachan, Early Harvest, Colvert, Fall Pippin, Hawthornden, St. Lawrence, Snow, Northern Spy, Red Canada, Ribston Pippin, Canada Russet and King of Tompkins County are grown. Those most esteemed are the Red Astrachan for summer, the R. I. Greening, Canada Russet and Snow Apple for Winter. The Codlin Moth has been worse than usual. No means are used for destroying the insects.

Plums.

Those cultivated are the Coes' Golden Drop, Duane's Purple, Imperial Gage, Jefferson, Yellow Egg, Peach Plum and Washington. Coe's Golden Drop, Yellow Egg and Duane's Purple are the most productive. Never saw Black Knot in North Douro.

Frosts.

Plums, Cherries and Apples were injured by a late spring frost in the end of April. The first fall frosts happened on the 14th and 15th of September.

Winter.

The Russet Apple, Sparhawk's Honey Cherry, Washington and Peach Plum and Sheldon Pear were injured.

Shelter.

The Arbor-Vitæ is planted for shelter.

Birds.

The Wax-Wing eats cherries.

Fruit under Glass.

In North Douro; the Black Hamburgh Grape, Taylor's Early Peach, Downton Nectarine and Turkey Fig are grown under glass.

COUNTY OF RENFREW.

Cherries.

Andrew Russell, Arnprior, has tried a variety of sorts. They become good plants for two or three years. Don't blossom. Fail. Has persisted with the Mayduke for twenty years and still persists. Has a specimen of it now in apparent health, and this season shoots two and three feet long.

Raspberries.

Has little experience with this fruit. Had the White Antwerp for some years. It fruited pretty well, with laying down in the fall. One of his neighbours had several sorts. One sort a good red berry, which seems to be hardy without protection in winter. The others have perished. The plant I had in '71 fruited this season; the berries not very well developed, probably from too much wood. Covered in winter.

Blackberries.

Have no experience. The plant I had in '71 fruited this season. The berries small. Sweet. Received no pruning. Too much crowded with wood. Covered in winter.

Pears.

Mr. Russell says with care we might fruit them. Not otherwise. Have the Flemish Beauty on the Quince. Five or six years' growth, with shoots this season two and three feet. My experience would say this must fail without protection. The Seckel I had in '71 and protected in winter. Is now healthy, with this season shoots 6 to 12 inches. Their failure arises, I think, from winter killing.

Apples.

Have here the Shorepippin (or Alexander), the Fameuse, St. Lawrence—bearing—and the Transcendant and Red Siberian Crabs. Bore sparsely this season. Could the Cedar Bird have anything to do with this? Flocks of them seemed to live upon the blossom while it was in flower. The Codling Worm prevails unprecedentedly. A Transcendent Crab. loaded with many bushels, had not one single fruit free from it. My attention was never called to it before, and as unprecedentedly there was not an aphis to be seen on the trees this season.

Plums.

Have had many varieties with poor success. Have now the Lombard, McLauchlan and others, with shoots two and three feet this season. The plants are now at least six years planted. Have had a few blossoms, but no fruit. In former years I have had the Reine Claude, Imperial and Blue, bearing a few fruit. The Curculio has been rather more sparing than usual this season of its ravages on our wild plums.

Grapes.

I have never had any Grape so delicate with me as the Eumelan which I had in 1870, but I am disposed to ascribe this more to my nursing than to the nature of the plant. I hope to make a good plant of it yet. The Delaware and Hartford with very little protection come out best in spring.

Strawberries.

The Wilson with me fruited largely. No vermin. My neighbours had good crops this season.

Frosts.

Little injury was done by the spring frosts. This fall, for the first time, the thermometer fell to about the freezing point, at six a.m., for two or three mornings, with fogs about sunrise. On the 11th October it fell two or three degrees below the freezing point at 6 a.m. The potatoes, tomatoes, grape leaves were untouched till that morning. Saw the first ice on 17th October.

Winter.

The bygone winter was lenient on trees and plants so far as I noted.

Shelter.

Our people are becoming alive to this desideratum.

Birds.

The Cedar Birds came in unusual flocks this season. They live on all sorts of fruits, mostly wild, however, as I proved one season by putting a nest in a cage, where the sire and dam fed their brood for about a month. On sowing the debris of the cage I had all sorts of fruits, mostly wild.

Paddle our own Canoe.

The nursery-men have recklessly supplied us with sorts unsuited to our climate. We ourselves must try and discover what suits us.

COUNTY OF SIMCOE.

Cherries.

The crop was not good. The Common Red is the only variety mentioned.

Raspberries.

The White Antwerp, Brinckle's Orange and Mammoth Cluster are grown: the latter is very productive and stands the winter well.

Pears.

The Beurre d'Anjou and Duchess of Bordeaux are the only varieties named. Very little attention is given to this fruit.

Apples.

The Red Astrachan, Early Strawberry, Early Harvest, Holland Pippin, Snow, Keswick Codlin, Maiden's Blush, Gloria Mundi, Michael Henry Pippin, Blue Pearmain, Pomme Grise, Peck's Pleasant, Rd. Island Greening, and two or three kinds of Russets and some others are grown. The Red Astrachan, Early Harvest, Duchess of Oldenburgh, Colvert, St Lawrence, R. I. Greening, Talman Sweet, Golden Russet are highly esteemed on account of their hardihood and productiveness. The Codlin Moth was most injurious to the Golden Crab.

Plums.

The Lombard and Blue Plum are the only sorts named: the Lombard is very productive. The Black Knot is not very troublesome. The Curculio was not troublesome.

Grapes.

The Eumelan is growing. The Delaware, Concord and Roger's No 15 (Agawam) ripened well this season at Midhurst, Township of Vespra.

Frosts.

Geo. Cowan, Craig Vale, says the frost nearly destroyed all the fruit crop in young orchards in this part. Apples and plums, when the trees were in full bloom on the 1st, 2nd, 3rd and 4th of June. He threw water on some of his trees before the sun rose, but it did not save the fruit. On the 12th October there was frost enough to form ice and crust the ground. At Midhurst a frost occurred on the night of the 1st of September, which killed melon and cucumber vines, but did no injury to fruit. At Shanty Bay there was frost on the 24th Oct., but without doing any injury.

Winter.

At Craig Vale several apple trees were killed, both grafted and seedling. Not an orchard in this section but lost trees, apples, plums and pears, some partly destroyed, but the largest amount killed outright. Time and cause I believe to be the hot days when the snow was going away and the cold hard weather afterwards. At Midhurst and Shanty Bay there was no injury done.

Shelter.

The Spruce, Balsam and Maple are planted for shelter.

Birds.

We cannot complain of any injury done to our fruit by birds. We lose a few cherries and a few grapes, but they are welcome to them in return for the good we otherwise receive from them.

Small Fruits.

Mr. O'Brien, Shanty Bay, says of the smaller fruits the Gooseberry is the only failure. Our Currants are often splendid; Raspberries the same. The Grape is succeeding much better than was anticipated, and its culture is much on the increase. I doubt, however, that we have yet the right culture. Many small circumstances lead me to the belief that the true culture here, as in many countries where the grape is indigenous, is neither by means of the trellis or arbour, but from a low bush, letting the Vine spread on the ground, and I should prefer letting it run on the grass rather than on open soil. The accompanying diagram will show the plan I am adopting; and which I should like very much to see tried by some one more skilled than I am. One circumstance among others inducing me to try this plan is the following. In the garden of the Rev. Mr. Hablen, at Penetanguishine, a Clinton Vine was allowed to run wild over the grass on the ground. The effect was very remarkable. The Vine not only bore profusely and ripened its fruit as early as the others of the same kind, but the grapes were much finer, both in size and flavour—so much so as to make like a different fruit.

COUNTY OF VICTORIA.

Cherries.

There are very few grown—mostly the common Red and a few of the Hearts.

Raspberries.

The Franconia, Brinckle's Orange, Philadelphia and Mammoth Cluster are grown. The three first named are nearly equal in productiveness; the fourth only recently introduced. The Mammoth Cluster proved the hardiest of all the past severe winter. The Mammoth Cluster has been fruited and much esteemed, and thought to be the best Black Raspberry and perfectly hardy.

Blackberry.

The Early Wilson killed back last winter, and was fruited this season for the first time. Some say it was not hurt by the winter.

Pears.

The Flemish Beauty is mentioned as one of the most promising. Thos. Beall, Lindsay is growing thirty varieties, all dwarfs; but they all look sickly and he is afraid they will not answer well.

Apples.

The Snow Apple, Talman Sweet, Keswick Codlin, Lady Apple, Hawthornden, Red Astrachan, Pomme Grise, Duchess of Oldenburgh, Fall Pippin, King of Tompkins County, and St. Lawrence are cultivated. The Snow Apple and St. Lawrence are most highly esteemed, proving healthy and hardy. The Codlin Worm is very injurious and seems to be getting worse every year.

Plums.

A number of varieties are grown, but no names given. One respondent says he has ten. The Imperial Gage, Lombard, Lawrence's Favourite and Washington are the most productive, the first named being the most profitable for market. No Black Knot. No Curculio.

Grapes.

The Eumelan Grape was perfectly ripe on the 25th Sept., sweet, juicy and fine flavoured The Vine was covered in winter. The Clinton uncovered was entirely killed down.

Frosts.

Fruit crop not injured by spring frosts. No injury by fall frosts as late as the 10th October.

Winter.

Thos. Beall says:—"All Apple trees have suffered, more or less. Golden Russet suffered more than any other; Northern Spy next; then Gravenstein. My Vines were not injured although left on the trellis."

Another reports:—"Many of the Apple and Plum trees were severely injured, some entirely killed and others partially (all varieties of Plum trees suffered), and the only varieties of Apples in my orchard that escaped unharmed were the Snow Apple, St. Lawrence and Talman's Sweeting. I am inclined to think that the destruction of those trees was not altogether attributable to the severe winter, but that the previous extremely dry summer had its share in producing the lamentable result. The trees made little or no growth in the summer and seemed to have very little vitality when the severe winter set in. All the orchards in this section suffered severely."

Shelter.

Thos. Beall says:—"I have planted largely for shelter. I use Spruce intermixed with the Canadian Walnut, which I have grown mostly from seed got from Ridgeway and St. Catharines. These Walnut trees are doing exceedingly well. I use Hard Maple trees for the eastern end. There are a great many trees being planted in the town for shade or shelter, mostly Maple."

Birds.

The Robin is destructive on the grape crop; the Cherry Bird on all small fruit.

Edwin Cooper, Port Carling, Muskoka, says:—

"This being a comparatively new district, fruit culture has not yet commenced; in fact the majority of the settlers will probably not devote their time to it.

"As regards my experience, I only made the attempt at planting this last spring, but hope to be enabled to give a practical account another year.

"I do not think the majority of fruit trees will bear the severe winters here, but doubt not that the small fruit trees will do well, on account of the protection afforded by the deep snow, it usually being from three to four feet deep here, and the winters steady throughout. The danger I apprehend to be in the very cold winds and sharp frosts, which sometimes succeed the melting of the snow, as I found tender plants this spring as fresh and green as in the summer, but the cold winds, after the departure of the snow, soon destroyed them.

"Fruits sufficiently hardy for our winters will undoubtedly do well, as the summers are generally very hot and vegetation thrifty. Wild fruits, such as the Plum, Cherry, Raspberry, Gooseberry, &c., do well here and were this summer unusually prolific, as were also small fruits cultivated by a few settlers"

COUNTY OF WATERLOO.

Cherries.

The crop, in general, was good. The Elton, Knight's Early Black, Black Eagle, Gov. Wood, Yellow Spanish, Mayduke White Heart, Kentish or Common Red, Reine Hortense, Belle Magnifique, Late Duke and Napoleon Bigarreau are grown. The Late Duke, Napoleon Bigarreau, Yellow Spanish, are esteemed for flavour, the Common Red for productiveness and cooking purposes. The birds eat all, especially the early and best flavoured.

Raspberry.

The White and Red Antwerp, Brinckle's Orange, Philadelphia, and Davison's Thornless are grown. The Brinckle's Orange and Philadelphia are very productive. The Philadelphia and Black Cap are the most hardy. The Mammoth Cluster has been fruited; is hardy, better than the Wild Black Cap. No insects noticed on the Raspberries.

Early Wilson Blackberry.

The fruit is large and flavour good, and the plants are generally doing well, having thus far endured the winters.

Pears.

Flemish Beauty, Ananas D'Ete, Belle Lucrative, Rostiezer, Elliot's Early, Osborne's Summer, Doyenne D'Ete, Seckel, Louise Bonne, Beurre Diel, Steven's Genesee, Graslin, Glout Morceau, Supreme De Quimper, Vezouzier, White Doyenne, Gray Doyenne, Beurre Clairgeary, Beurre Giffard, Albertine, Swans Orange, Bartlett, Duchesse D'Angouleme, Beurre Bose, and several German and Pennsylvania Pears not in general cultivation, such as Weidman's Early, Wine Pear, &c., also Blood Good, Clapp's Favourite, D'Esaulniers, Manning's Elizabeth, Tyson, Buffam, Napoleon, Washington, Oswego Beurre, and Winter Nelis are grown. There was no blight of any consequence the past season.

Apples.

The following sorts are grown:—

Baldwin, Cabashea, Cayuga Red Streak, Summer Pippin, Summer Sweet Paradise Summer Bellflower, Yellow Bellflower, Palmer's Sweeting, Early Harvest, Snow Apple (two varieties), Primate, N. Spy, Vandervere, Hawthornden, Fallawater, Holland Pippin, Hawley, Porter, American Summer Pearmain, Rawle's Jeneting, Newtown Pippin, R. I. Greening, Keswick Codlin, Wine Sap, Wagener, Alexander, Red Astrachan, White Astrachan, Tetofski, Monmouth Pippin, Ribston Pippin, Clyde Beauty, Rome Beauty, Swaar, William's Favourite, Minister, Mother, English Russet, Bourassa, Dominie, Melon, Beauty of Kent, Golden Sweeting, Sweet Bough, Hawkin's Pippin, Jonathan, Peck's, Pleasant, St. Lawrence, Mountain St. Lawrence, King of Tompkins County, Duchess of Oldenburgh (two varieties), Pomme Grise, Pomme Grise D'Or, Rox Russet, Golden Russet of W. N. Y., Dutch Mignonne, Colvert Gravenstein, Gloria Mundi, Pomme Royal, Maiden's Blush, Goyeau, Canada Russet, Blenheim Orange, Cooper's Market, &c.; and several other German and Pennsylvania Apples that are not in general cultivation out of this (Waterloo) county, such as Green Rambo, Gortze, Liesser, Red Rambo, Bamberger, &c.

Those most esteemed are the Red Astrachan, Early Strawberry, Keswick Codlin Duchess of Oldenburgh, Gravenstein, St. Lawrence, Baldwin, Snow Apple, Rambo, Northern Spy, Rox Russet, Golden Russet, Swaar, and Esopus Spitzenburgh. The Codlin Worm has been, on the whole, less injurious this year than usual. Only two report having done anything to get rid of them; these have tied woollen cloths in the branches, and strips of cloth around the trunk, with good success.

Plums.

The following varieties are named by Simon Roy, Berlin, in the order of hardihood, viz.:—

Guthrie's Apricot, Pond's Seedling, Bradshaw, Lombard, Quackenboss, English Magnum Bonum, Prince's Yellow Gage, Imperial Gage, Reine Claude de Bavay, Oullin's Golden Gage, Guthrie's Late Green, McLaughlin, Bingham, Huling's Superb, Dennison's Superb, Bleecker's Gage, Columbia, Fulton, Victoria, Smith's Orleans, and Coe's Golden Drop. The most productive are the Lombard, Imperial Gage, Washington, Bleecker's Gage, Columbia, English Damson and Green Gage. The most profitable for market are the Imperial Gage, Washington, Bleecker's Gage, Columbia, Red and Yellow Magnum Bonum, Smith's Orleans, and Blue Plum. The Black Knot is evidently not so troublesome here as in many places, though it is known, and affects the Common Blue Plum the most. Mr. Schofield thinks favourably of an application of iron filings and turnings to the soil about the roots as a re-

medy for the Black Knot. Others say they employ "Paddy's remedy for saving his leg—cutting off the limb." The Curculio, on the whole, has not been as bad as in former years, though some say it has been plentiful. Simon Roy says that he has practised jarring the trees "with first-rate success—so much so that many of the trees are exhausted by over bearing," and many others bear testimony to the like effect. Sheriff Davidson thinks if this mode were followed out persistently, at the proper time, we would have plenty of Plums.

Eumelan Grape.

Titus Sheard, New Aberdeen, says it is hardy and free from mildew. James Younie, Galt, has fruited it; thinks it a fine early and hardy sort, free from mildew. Thomas Mc Millan, Galt, has ripened it well; flavour good, berries small. James W. Scott, Galt, fruited it in 1871 and 1872; bunches very compact, fruit good, hardy with winter protection, and free from mildew. At Berlin it has not yet fruited; appears to be hardy, and free from mildew.

Frosts.

The fruit crop was not injured by late Spring Frosts. The first ice formed at Galt on 15th October. The first frost occurred on the 2nd October. At Berlin the first frost, injuring vegetation, occurred on the 18th October, but did no damage to fruits.

Winter.

A large majority of the reports say no injury was done by the cold of the past winter, but Mr. Geddes, Berlin, says, "Grape Vines unprotected were much injured, nearly all the buds were killed, and most of the plums were very tardy in pushing at first, but afterwards made a rapid growth.

Shelter.

Mr. Geddes has planted Lombardy Poplar. H. F. J. Jackson, says, "Our spring and fall winds—the former occurring about blossom time, and the latter when the fruit hangs at the fullest—are very severe and continuous. The large varieties of pear suffer, of course. Dry weather and high winds caused the pear crop to fall last season. We plant Lombardy Poplar about the fences; Evergreens and Filbert Bushes on the west and north." The Spruce is beginning to be planted in a few places about Galt. Norway Spruce is preferred by Sheriff Davidson.

Birds.

Nearly all unite in saying that the Birds are, in their opinion, more useful than injurious.

Fruit under Glass.

Sheriff Davidson grows a few Peaches on the back wall of his vinery, and the Royal Muscadine and Black Hamburg Grapes.

Vineyard of Hardy Grapes.

Mr. Gotlieb Bettschen has a small vineyard of five hundred vines, which has come into bearing this year, the fruiting of which is very satisfactory. It is one mile north of New Dundee, Township of Wilmot, Waterloo Co.

COUNTY OF WELLAND.

Cherries.

The crop was an average generally, but at Humberstone there was a failure, caused by cold rains and hard freezing at the time of blooming, "the principal cause for all our failure in the fruit line." The Black Tartarian, White Ox Heart, Mayduke, Yellow Spanish, Kentish and others are grown; Mr. Stoner, Humberstone, having forty varieties on his place. "The Yellow Spanish and Kentish are most esteemed," says Dr. Bell, Clifton, "the first named

for the solidity of its flesh and sweetness, and the latter for stewing, because of its acidity." Mr. Stoner says that the Bigarreaus are almost worthless, the fruit rots on the trees, and is much affected by the Curculio. He would only plant, of this class, Yellow Spanish and Gridley or Apple Cherry, the latter an enormous bearer, the fruit with a peculiar apple flavour and not inclined to rot. Of the Hearts, he esteems the Black and White Tartarian, Early Purple Guigne, Downer's Late Red, White French Guigne, and Black Heart. Of the Dukes, he names the Mayduke, Early Richmond, Belle Magnifique, Reine Hortense, and Belle de Choisy. The latter is the most delicate Cherry we have, but a somewhat shy bearer.

The birds attack all sorts, more especially the early and tender-fleshed varieties.

Raspberries.

The Philadelphia, Doolittle, Black Cap, Mammoth Cluster, and Red Antwerp are grown. The Philadelphia and Doolittle are the most productive and the most hardy. Z. B. Lewis, Clifton, has fruited the Mammoth Cluster and thinks highly of it. J. Neff thinks it sour.

Pears.

The White Doyenne, Bartlett, Summer Bonchretien, Jargonelle, Louise Bonne, Vicar of Winkfield, Buffam, Flemish Beauty, and many others are grown. Mr. Stoner says he has forty varieties.

The trees have not suffered much from blight this season. Mr. Stoner says his trees always suffered most in August after a severe drought, followed by refreshing showers, accompanied by thunder and lightning, attended with great heat.

Apples.

All varieties suited to this climate are grown in this county. Mr. Stoner says he has a hundred sorts. Those giving best satisfaction, taking all things into consideration are—

Summer, Early Harvest, Keswick Codlin, Red Astrachan, Sweet Bough, Golden Sweet, Early Joe, &c.

Fall—Fall Pippin, Gravenstein, St Lawrence, Hawley, Rambo, Fameuse, &c.

Winter.—Baldwin, R. I. Greening, Esopus, Spitzenberg, Norton's Melon, Ladie's Sweeting, Northern Spy, Beauty of Kent, American Golden Russet, Roxbury Russet, &c.

The Codlin Worm has been very injurious the past season, and has been allowed to multiply without any efforts being made to diminish their numbers.

Plums.

The Washington, Lombard, Reine Claude de Bavay, Green Gage, Duane's Purple, and many others are grown; Mr. Stoner says that he has a German Prune he values more than all the Plums he has. "This German Prune was obtained by my father, about 25 years ago, from a German, who brought with him some sprouts for his own use. It is the greatest bearer we have, and very hardy, the most exempt from the Black Knot and the Curculio of any Plum I know of. Fruit rather large. Dark purple, covered with a thick blue bloom; of a rich vinous flavour. It can be kept a long time. It ripens the 1st of September, and improves in flavour by being allowed to hang on the tree. It should be generally known. I believe it to be the most valuable Plum in Ontario."

The most productive are the Lombard, German Prune, Smith's Orleans Black Imperial, and Blue Damson.

The German Prune and Blue Damson are the most profitable.

The Black Knot is quite prevalent, but by keeping a sharp look-out, and promptly cutting off the diseased parts and burning them, no severe loss need be suffered from this cause. The Curculio has been quite abundant. Those who have practised jarring the trees have had good success in procuring a crop of Plums.

The Eumelan Grape.

Dr. Bell has tried it and says it is very small, sweet, of good flavour, and very early, ripening before the Delaware. Valuable on account of its earliness.

Frosts.

The fruit generally was not injured by spring frosts, but at Humberstone the crop was almost a total failure, caused by cold rains and hard freezing in time of blooming.

No fall frost to do any injury until about the 10th October.

Winter.

Mr. Stoner says Peach trees lost their fruit buds, but no loss of trees. Grape vines all suffered more or less except the Clinton. Isabella, Catawba, and Diana froze to the ground. Concord; some of fruit lost, no harm to wood. Delaware; no fruit lost, some wood. Hartford Prolific; lost no wood, a fair crop of fruit. Allen's Hybrid; froze to the ground. Roger's Hybrid, No. 4; not much harmed. Roger's Hybrid, No. 19; lost some wood and part of the fruit. Roger's Hybrid, No. 15; lost all bearing wood, no fruit. The above named vines remained on the frames all winter.

Shelter.

Jonas Neff says that "planting for shelter is practised to a very limited extent. The sugar-maple is the favourite tree with us. I have half a mile of Honey Locust set out for outside fence and shelter, and they promise well so far."

Leslie A. Stoner says: "I have a belt of evergreens planted to the north and west of the dwelling-house, planted with native Hemlock, American Red and White Cedar, set alternately, to good advantage. I have Balsam Fir, and Norway Spruce—the latter planted 15 years, is now about 40 feet high. If I should plant for garden or orchard shelter, I would plant Norway Spruce. The principal trees planted are the Sugar Maple."

Birds.

Dr. Bell, Clifton, says:—"Cannot give names: some small birds attack Cherries. (The most injurious birds are neighbours' hens.) Young specimens of Homo Bimana (*var. vagrant,*) are very injurious. Should they not be *jail birds?*"

Mr. Stoner.—"The only bird we dread, is what we call Sapsucker, that taps and bleeds the tree all the season when the sap flows, generally attacks the most thrifty trees with a smooth bark. They will kill the trees if you don't kill them. There are two other kinds seen very busily during the winter, pecking in the rotten wood and old bark of Apple trees, searching for the Codlin Worm and other insects. Spare them by all means, and thank them too. We cultivate and pet all kinds of birds They are our friends; they will sing for us, and destroy our enemies—the insects. We have planted many large-growing cherry trees, mostly seedlings, for shelter and the birds. We get a nice share of the cherries. We also have the Clinton Grape growing wild up into trees for the birds. They seldom trouble our grapes in the garden. Why cannot every fruit grower do likewise, that has his broad acres—do something for his valuable friends—the birds?"

COUNTY OF WELLINGTON.

Cherries

The crop was very good. The Black Tartarian, Kentish, Elton, Yellow Spanish.Plum Stone Morello, Late Duke, Mayduke, Reine Hortense, Empress Eugenie and Belle Magnifique are grown. The Kentish and Mayduke for cooking; Elton and Black Tartarian for table, are among the most esteemed. The birds attack all, especially the sweet sorts.

Raspberries.

The Philadelphia, Franconia and Col. Wilder are grown. The most productive is the Franconia. All sorts require to be laid down and protected in winter. Geo. Elliott, Guelph, says he has fruited the Mammoth Cluster; that it is poor, much resembling the wild brambleberries in England. Wm. Cowe, Mount Forest, has fruited it and thinks a good deal of it; says, "It is just the thing; very much admired with us." It is hardy.

Blackberry.

The Early Wilson has been grown but a short time and only by a few. Seems to be hardy thus far.

Pears.

The Duchess d'Angouleme, Flemish Beauty, Belle Lucrative, White Doyenne, Bergamotte Cadette, Buffam, Beurre d'Anjou, Graslin, Soldat d'Esperance, Seckel, Ananas d'Ete, Jargonelle, Bartlett, Dearborn's Seedling, Vicar of Winkfield, Brandywine, Beurre Clairgeau, Osband's Summer, Grey Doyenne, Clapp's Favourite, Van Mons, Steven's Gennessee, Glout Morceau, Tyson, Beurre Diel, Beurre Giffard, Onondaga, Bezi de Montigny and Manning's Elizabeth, are cultivated. There seems to be but little blight.

Apples.

Nearly all the usual varieties are grown in this County. The Red Astrachan, Duchess of Oldenburgh, Snow Apple, and St. Lawrence are esteemed for their hardihood in the neighbourhood of Guelph; for Winter, the R. I. Greening, Spy, Russets, Swayzie Pomme Grise and Spitzenburgh. The Codlin Worm has been quite abundant. James Anderson, Springfield Farm, near Guelph, says: — "The Codlin Worm has been very injurious this season, but since the Fruit Growers' Meeting, at Guelph, I commenced tying old carpets around the trees, and caught the worm by thousands. I looked at them about once a week and killed at one time as many as sixty on a tree. I think an old piece of carpet tied on with a string better than a straw rope. ☞ I have saved the half of my apples by this means."

Plums.

The Common Blue, Bradshaw, Washington, Yellow Egg, Lombard, Smith's Orleans, Huling's Superb, Victoria, Pond's Seedling, Yellow Gage, Reine Claude de Bavay, Orange, Lawrence's Favourite, New Early Orleans, Prince Englebert, Coe's Golden Drop, Imperial Gage, McLaughlin, Jefferson, Green Gage, Magnum Bonum, General Hand, Guthrie's Apricot, McMillan's Early, Columbia and Fellemberg are cultivated. The most productive are, Washington, Lombard, Smith's Orleans, Yellow Gage, New Early Orleans, Coe's Golden Drop and Huling's Superb. The most profitable for market are, Lombard (first), Smith's Orleans Yellow Gage, Yellow Egg, Coe's Golden Drop (when it will ripen), Huling's Superb and Bradshaw. Washington too tender to transport.

The Black Knot is not very prevalent; attacks the common blue plums most seriously. The only remedy, remove with the knife and burn every piece as soon as seen. The Curculio has not been sufficiently numerous to thin out the fruit. Mr. Elliott picks up all fallen plums every day or two and pours boiling water over them. This plan, practised for some years, has completely cleaned his garden of curculio.

The Eumelan Grape.

Mr. Elliott has fruited it; had fifteen bunches, good sweet grape, ripened here 10th September; thinks it promises to be the earliest grape yet.

Frosts.

John Armstrong, Marden, says:—"We had frost when the trees were in blossom, and the furthest advanced suffered considerably." Alex. Glass, Guelph, says:—"The fruit suffered a little, as we had frost often all the month of May." Others say the fruit escaped injury from spring frosts.

John Armstrong says:— "Had a slight frost early in August, which blackened a chance leaf of the potatoes. On the 3rd of September, a sharp frost destroyed the squash vines, but did not observe any harm to *fruit*."

Alex. Glass says:—The first frosts were in the first week of September. On the second of October, there was a pretty hard frost. It froze all the Melons and Squash vines and Potatoes. Wm. Cowe, Mount Forest, says the first frost was on the 3rd of September.

Winter.

James Anderson had four fine healthy plum trees completely killed. They were Duane's Purple, Lombard, Victoria and Washington. The Imperial Gage and Princes' Yellow Gage alongside escaped.

John Armstrong says: "My grapes all suffered, as I think, from the want of snow, as almost none lay on the pea straw with which I cover them. The Delaware suffered most, and produced no fruit, and made scarcely any growth. The Hartford Prolific, Concord, Clinton and Isabella made much less than their usual growth, but produced some fruit, better ripened than on any previous year since planted.

Charles Scott, Melville Mills, Orangeville, says:—"The following trees were killed last winter: Two Rhode Island Greening, two King of Tompkins County, one Snow, Bradshaw Plum, Louise Bonne de Jersey; and a great many others partly killed."

Shelter.

Charles Scott, Orangeville, says—"I have planted a Hemlock hedge to the north of the fruit garden. It is growing well; planted two years and is two feet high, sheared twice. Last winter killed it a little at the top."

Charles Scott, Elora, says:—"As regards the garden, I have done so in former years, and this fall have been planting shelter for an orchard, intended to be planted next year. Have planted mostly evergreen trees, Spruce, Hemlock, Balsam and Cedar."

Birds.

The Wax Wing and Robin, with some other small birds, eat cherries, grapes and small fruits.

Fruit under Glass.

Douglas Sorbey, Guelph, cultivates the Rose Chasselas, Black Hamburgh and Buckland's Sweet Water Grapes, along with Peaches and Nectarines.

Gooseberries.

James Anderson says:—"I read a very interesting article on Gooseberry Culture, by Mr. Mills, of Hamilton, in the Fruit Growers' Report of last year. I have now grown the White Smith and the Houghton Seedling with great success for 5 or 6 years, and no mildew. This year I had several bushels off about 8 or 10 young bushes. I manure with a compost of ashes, salt and muck, mixed with lime and barn-yard manure. Keep them well pruned out in the centre and allow no trees to shade them; soil gravelly loam. I had them (the White Smith) weigh 3 to the ounce this year on an average, and it was a very dry year. I used hellebore to kill the saw-fly, and sprinkled the bushes, when in bloom, with gypsum which, I was told, is good to prevent mildew. By following the above directions I have fruited the above varieties for 6 years, and have not had the appearance of mildew. I mulch the roots well in summer. Hope the above may be useful to those that cannot grow gooseberries."

Springfield Farm, near Guelph.

COUNTY OF WENTWORTH.

Cherries.

The crop has been very good the past season. The Governor Wood, Mayduke, Reine Hortense, Yellow Spanish, Black Tartarian, Belle Magnifique, Common Red or Kentish, Elton, Black Heart and Napoleon Bigarreau are grown. The Dukes and Morellos are most esteemed for hardiness, productiveness and culinary purposes The early and sweet varieties are most subject to be eaten by birds; but W. H. Mills, of Hamilton, says that their depredations are easily prevented by placing a stuffed hawk above the trees.

Raspberries.

Davison's Thornless, Golden Thornless, Miami, Doolittle, Mammoth Cluster, Clarke, Philadelphia, Brinckle's Orange and Franconia are grown. "Of the Black Caps," Mr. Mills says, "the Miami and the Mammoth Cluster, and of the others the Philadelphia, are the most productive. The most hardy are Davison's Thornless, Mammoth Cluster and Philadelphia. Has fruited the Mammoth Cluster and does not esteem it as highly as Davison's Thornless, Miami or Doolittle."

Pears.

The Louise Bonne, Bartlett, Flemish Beauty, Tyson, Sheldon, Lawrence, Beurre d'Anjou, Duchess d'Angouleme, White and Grey Doyenne, Belle Lucrative and all the usual varieties are grown. Very little blight reported this season.

Apples.

All the varieties of apples are grown that are usually cultivated.

James Heslop, Dundas, says:—"I esteem the Baldwin for its great productiveness, and reliable keeping qualities. The Spy for its high excellence of flavour as a dessert and cooking apple and for its keeping qualities. The Early Harvest, Gravenstein, Snow, Pomme d'Or for their unsurpassed dessert qualities, and the two first for their good cooking; also the Red Astrachan for its beautiful appearance, good market and fair cooking qualities. The Fall Pippin, Colvert, Fall Janeting, Cayuga Red Streak for their excellent cooking properties, the Fallawater and King of Tompkins for their attractive appearance—the first partaking of the Baldwin qualities and a thick tough skin, a valuable compensation for its ordinary quality of richness; but the Greening surpasses all the rest for its *continued good qualities*, although *not possessing any of them* in the *highest degree*. It is the apple for the million, viz,—for its local and export market qualities, as a keeping, cooking, dessert and great productiveness, is unrivalled in my orchard. My experience leads me to the conclusion that those varieties possessing the highest qualities of flavour and richness require the highest cultivation."

The Codlin Worm has been exceedingly injurious. James Heslop says he has not tried any means for destroying the worms, but if this worm be not stopped soon, means will have to be resorted to if it requires a *hemp rope*.

W. H. Mills says:—"I make traps rapidly by taking two strips of old shingle from 3 to 6 inches wide, and place between two strips of old carpet, (which, I have no doubt, could be substituted by other material) of about the same width of the shingles, clamp the whole together by the ordinary wooden clothes-pin. Place these traps along the limbs. The larva or worm crawls between the shingles by hundreds spins its web in the woolen fibre, and forms a cocoon, (and if not disturbed) leaves an imago shell to emerge into that beautiful but destructive small moth, ready again to deposit more eggs in the calyx.

These traps require attention at least once a week during the moth season, by removing the woollen rags and dipping in boiling water or running them through a clothes-wringer, these traps, by care, may be made to last many seasons. In addition, I wrap around each tree a doubled piece of woollen rag, and clamp with clothes-pins. I pick up all fruit as soon as fallen; (but older orchards may have pigs turned in) I even shake the trees for the purpose of getting the damaged fruit. Small glass lanterns are kept burning at night, set in shallow basins, containing coal oil, and it is amazing to see the quantities this lure catches."

Plums.

All the usual varieties are cultivated. The most productive are Smith's Orleans, Reine Claude de Bavay, Columbia, Green Gage, Bingham, Washington and Lomb rd. The black knot is not very troublesome; appears most in the Common Blue; the only remedy is amputation and burning. The Curculio has not been very abundant the past season. Those who have tried jarring the trees find it to be very successful, and the only reliable means of securing a crop of plums.

Frosts.

No injury from late Spring frosts. James Heslop says the frost on the 2nd September did not injure anything; on the 12th October it partially killed tomatoes, but no injury was

done to fruits; the frost on the 16th of October killed the leaves of the Grape vines, and froze the north side of the ungathered apples so that a thin coat of ice formed on them by reason of a very timely dizzling rain, which fell early in the morning and saved the fruit from the threatened injury.

Winter.

There was much injury done to Grape vines and trees, usually considered hardy, by the combined action of cold and drought.

Shelter.

James Heslop has planted Red Cedar. Arbor Vitæ, Hemlock, White Spruce and Canadian Balsam. Others are planting the Norway Spruce and Maples.

Birds.

The Robin, Blue Jay, Wax Wing, and Crow are thought by some to be injurious, others think they are not half as bad as pilfering boys.

Fruit under Glass.

In many places exotic Grapes and Peaches, Apricots, Nectarines and Figs are grown under glass.

COUNTY OF YORK.

Cherries.

The crop was good in most parts, though some speak of it as being very poor. About Markham, only the Common Red produced fruit this year. The Black Eagle, Black Tartarian, Napoleon Bigarreau, and Kentish or Common Red, Mayduke, Elton, and Belle Magnifique, are grown. Each of these finds those who esteem them most highly. The early and sweet varieties are most subject to being eaten by birds.

Raspberries.

The Red and Yellow Antwerp, Black Caps, Franconia, Fastolff, Philadelphia, and Brinckle's Orange, are grown. The Black Caps are very productive and hardy, and of the Antwerp family the Philadelphia and Franconia are the most hardy and productive. Col. Norris, Wexford, has not succeeded in carrying the Mammoth Cluster through the winter.

Pears.

The Bartlett, Marie Louise, Louise Bonne, Duchess d'Angouleme, Beurre d'Anjou, Glout Morceau, Vicar of Winkfield, Napoleon, Seckel, Sheldon, Clapp's Favourite, Jaminette, Tyson, Buffum, Beurre Diel, White Doyenne, Flemish Beauty, and Edmonds, are grown. The pear blight has not been very bad the past season.

Apples.

All the usual varieties of apples are grown. Those most esteemed are the Baldwin, R. I. Greening, Snow Apple, Rox Russet, Golden Russet, Red Astrachan, Early Harvest, Swaar, Duchess of Oldenburgh, Fall Pippin, Lyman's Pumpkin Sweet, St. Lawrence, Spy, Ribston Pippin, Esopus Spitzenburgh, Yellow Bellefleur, Gravenstein, and Pomme Grise. The Codlin worm has been on the whole less injurious than usual, though sufficiently abundant to do much injury. No means reported as having been tried of trapping and destroying these worms.

Plums.

The Yellow Egg, Green Gage, Washington, Common Blue, Yellow Gage, Magnum Bonum, Imperial Gage, and Coe's Golden Drop, are grown. The most productive are the Imperial Gage and Yellow Egg, and also most profitable for market. Very little of the

Black Knot of late years, though it has killed nearly all the Blue Plum trees in the county. The only remedy is cutting off the affected part and burning it. The Curculio has not been very abundant the past season. Those who have practised jarring, &c., have found it to be very successful.

THE EUMELAN GRAPE.

Thomas Brownlie, Danforth, says the vine received, 1870, has done very well this season, made a good vigorous growth, was not injured by insects or mildew, cut 14 lbs of grapes from it this season; the fruit was mostly ripe on the 15th September, but a few pounds were allowed to remain on the vine for about a month longer, and they seemed to improve greatly. I had some of them near Christmas, and I think they will be a first class keeping grape.

FROSTS.

No injury reported to fruits by Spring frosts. Colonel Norris, Wexford, says, the first time ice was noticed by him was on the morning of October 17th. D. A. Crosley, of Markham, says that the first frost which injured grapes occurred on the 13th October. W. T. Goldsmith, Toronto, says the first freezing was on the morning of the 20th October; a few white frosts previous, but did no injury. John Gregory, Milnesville, says the first frost occurred on the 3rd of September. Thomas C. Thomson, Yorkville, says the first severe frost was on the 15th October, forming ice to the thickness of a five cent piece. John E. Bull, Werton says the first frost was on the 3rd of September, but not severe enough to kill potatoes.

WINTER.

Colonel Norris says "I should think all were. But apple trees seemed to suffer the most; of fourteen young apple trees planted last fall, every one was killed. Large trees, perfectly healthy, and planted three years, were many a long time coming into leaf. When I left home on the 6th of June, six or seven of these, I thought, would scarcely come into leaf, and when I returned on the 28th they were still only in partial leaf. I did not lose one of them, but several limbs were wholly killed." W. T. Goldsmith says, some Delaware and Eumelan vines were killed to the ground. James McKirdy, Toronto, says some varieties of apples suffered badly, among which were the Cabbashea and several of the Codlin varieties (names of which I have not got). The trees mentioned shot out vigorously and blossomed profusely, but in a short time they began to look sickly and half dead, the leaves falling off and withering up. In some cases only half of the tree seemed affected, in others, all the tree. I may as well mention that the same trouble has been experienced all around this neighbourhood last winter. Others report similar injury.

SHELTER.

Some Spruces, Balsams, and other evergreens are planted. Thomas C. Thomson says, "they are planted to a very considerable extent, we have a windbreak, principally pines, on the north and east sides of our main orchard. The whole of our property (40 acres, more or less) is surrounded by a belt of pines and spruces and firs. I know two of our neighbours who practise, or rather have practised tree planting for shelter, as they have each a windbreak of pines and firs."

BIRDS.

The Robin, Wax Wing, Crows (carrying off apples), and Woodpeckers devour cherries and small fruits. Colonel Norris says "None, most emphatically. Their benefits far, very far, exceed their injuries."

FRUIT UNDER GLASS.

Exotic vines and other fruits are cultivated largely in this county.

PROVINCE OF NEW BRUNSWICK.

Isaiah Tingley, Harvey, Albert County, says that the following varieties of apples are grown there—viz., R. I. Greening, English Bough, Gravenstein, Alexander, Pumpkin Sweet, English Red Streak, Ribston, and Golden Pippin. Those esteemed most highly are R. I.

Greening, Summer Bough, English Red Streak, and Gravenstein. The Codlin Worm was more than ordinarily injurious this season, and no means have been used for their destruction.

PLUMS.

The Green Gage, Washington, Magnum Bonum, and Imperial Gage are grown. The Imperial Gage is decidedly the most productive. The Plum Curculio is not known.

FROSTS.

Fruit crop uninjured by frost. First frost occurred September 20th in this autumn, and no injury to fruit.

WINTER.

No fruit trees injured by severity of last winter. Winter not very severe.

SHELTER.

I find tree planting without shelter *almost* impossible. Use for shelter spruce and fir. The latter much preferable.

BIRDS.

Crows mar the sweet apple in their endeavours to pluck them. Mr. Tingley explains "I have answered questions only so far as our fruit growing is pertinent."

ON THE CULTIVATION OF THE EUROPEAN GRAPE VINE UNDER GLASS.

Read before the Meeting of the Fruit Growers' Association, at the Agricultural Hall, Toronto, October 9, 1872.

BY JOHN GRAY, OF THE BROCKTON NURSERIES.

In attempting to give you my experience in the culture of the European grape vine under glass, I do so with great diffidence, conscious of my inability to give you as clear and comprehensive a view of the subject as it demands. But having an experience of thirty eight years in this climate, the few hints I will give may be of some value to those who are desirous of information on the subject.

In the first place, I would particularly mention the importance of having the borders in which the vines are to be planted properly prepared. The plan which I adopt in preparing my borders is as follows:—I generally procure a quantity of sods from an old pasture or commons, five or six months before I commence to make up the border. This I pile up in a heap about six feet wide; and to about every ten cartloads of sods I add one cartload of lime-rubbish, one load of thoroughly rotted manure, and about one barrel of unboiled bones. This, if the sods are taken from a good calcareous loam, will make what may be termed a first-rate border for vines.

I wish to draw your attention to the fine specimens of grapes now on exhibition in the hall up stairs, from the vineries of Philip Browne, Esq., Bathurst Street, in this city. You will see that they have taken first prizes in all the classes in which prizes were offered by the T. H. Society for grapes grown under glass. Now, as Mr. Browne's vinery was put up under my instructions, and the vines planted by myself, I think I cannot do better than give you their history. The house is a span roof, forty feet long by twenty feet wide, running north and south. The parapets are about two feet six inches high, and the apex twelve feet six inches. The ventilators are at the top, on both sides; there are ventilators over the doors also; but these are not used until the fruit begins to colour, for the reason that air admitted at any place, except at the top of the house, before the ripening season comes on, causes mildew, which is the greatest enemy the grapegrower has to contend with in this climate. The soil was a good dark sandy loam, and required drainage, which was done as follows:—One drain

was made along the centre of the house, three feet deep, and one in front of the borders, on each side, parallel to the house, and fifteen feet from it, thus giving borders fifteen feet on each front, with twenty feet inside. Diagonal drains were sunk ten feet apart from the outer to the inner drains, and the centre drain continued to where there was an outlet for it. The whole surface to the depth of 2½ feet was dug out, and the material as above was put in, only that the sods were fresh from the commons, cut about two inches thick. Of course, it would have been better if the turf could have been laid up to rot some time; but, as there was no time for this, the border had to be finished off at once. The border was, therefore, composed of sods fresh from the common, well rotted manure, the soil taken from the surface in excavating for the border, lime-rubbish, and some coarse bones, sufficient to raise the bed about eighteen inches above the level of the surrounding soil. The vines were planted on the 29th of June, 1866, raised from cuttings of the single eye planted in the month of February previous. At the time of planting, they were about eighteen inches high, and were planted 2½ feet apart. The roots were carefully spread out from the ball of earth in which they were growing, and the points of the young rootlets cut off. This was done to cause them to throw out more lateral roots (as I find by experience that vine roots, when not checked, very soon run through the prepared soil without throwing out lateral roots: when they get into the unprepared soil, they receive a check, the roots run down to the cold subsoil after moisture; disease in the vine soon follows and the vines which promised so well the first few years, turn out to be a failure, except means be taken to get their roots to the surface again.

After the vines were planted and watered, they were shaded for a few days. They received no check. By the middle of August they had made a growth of about ten feet, when the points of the vine were nipped off, to check the growth, and cause them to ripen off the wood. The inside borders were kept well watered during the growing season, and the young vines occasionally syringed. They were pruned down in November to within one foot of the ground, and covered up with earth for the winter. The following spring they started to grow vigorously. Two shoots only were allowed to grow, the stronger of which was allowed to run to the top of the rafter, which it reached by the beginning of August, when the point of the shoot was nipped off as before. The second shoot was stopped at about two feet from the base. The use of this shoot is to get a new cane from, whenever I find it necessary to cut out the old one, which I always do, after producing two or three crops. I find that, by following this system, I can always have larger bunches, and have my vines in a more healthy and vigorous state of growth than I could have by continuing the spurring-in system on the old cane. At the second pruning, in Nov. 1867, I found the canes thoroughly ripened. I cut them back to about half the length of the rafter, and thinned out the eyes as follows:—I left the top eye, which I call No. 1, cut out 2 and 3, left 4, cut out 5 and 6, left 7, and so on to the bottom of the cane. This leaves the eyes on alternate sides, and will produce as many bunches as the vine is able to bear, and larger than if all the buds were left on, and allowed to break. The canes were then bent down along the front of the house, and covered up for the winter.

The following spring, they were uncovered about the second week in April, and the lower part of the vine tied to the trellis, with the top bent down. In this position they were allowed to remain until all the buds had broken, when they were tied in their proper place. They were syringed regularly every morning, the borders inside got a thorough soaking of rain water, and were kept moist throughout the growing season. About five or six bunches were allowed to remain on each vine, one only on each spur. They were shortened in one leaf beyond the bunch; and all the laterals during the remainder of the season were kept shortened in the same way. Air was admitted at the top, about 8 a.m., when the weather permitted, and closed early in the afternoon. The crop ripened beautifully, and some of the finest bunches of Black Hamburg, Muscat Hamburg, West's St. Peter's, Lady Downe's Seedling, Royal Muscadine, Rose Chasselas, White Frontignan, Grizzly Frontignan, and Chasselas Vibert, were exhibited at the Autumn Show here, and obtained the leading prizes.

They have continued to bear well each year. Last year and the present, they were particularly fine, the crop averaging about 300 lbs. each year. Mr. Browne's gardener has no pretensions to a knowledge of grape-growing; he merely follows instructions, and, I believe, does it faithfully. When I state that the present year he took the first prize for the best and heaviest bunch of Black Hamburg, the best and heaviest bunch of white grapes, the best and heaviest bunch of black, of any variety (Muscat Hamburg), the best three bunches of black

grapes (Lady Downe's, Muscat Hamburg and Black Hamburg), and the best three bunches of white grapes (Royal Muscadine, White Frontignan, and Chasselas Vibert), all thoroughly ripe and well coloured, it shows that the climate of Canada is particularly well adapted for the cultivation of the European grape under glass, and without fire heat.

To those who are desirous of having grapes early, and, indeed, to all grape-growers, I would recommend the perusal of "Thomson's Treatise on the Vine," where full and particular instructions are given, far better than any I can give you, for the raising and management of the vine, both with fire heat and in cold vineries.

In addition to the varieties named above, all of which I can strongly recommend as first class in every respect, are the following new varieties (which are spoken of very highly in the English gardening periodicals) all of which are to be had here, viz., Golden Champion, Mrs. Pince's Black Muscat, Maddersfield Court Black Muscat, White Lady Downe's, Royal Ascot, Royal Vineyard, Foster's White Seedling Trebbiana, Gros Colman, Golden Hamburg, Buckland's Sweet Water, &c. Many of these have already fruited here, and are really worthy of cultivation: and I am strongly of opinion that many of them will be found to thrive better here than in England, and be a great acquisition.

REPORT OF THE COMMITTEE

Appointed "to examine the country within a radius of fifteen miles about Toronto, and report its capabilities for the production of fruit, its peculiar advantages and disadvantages for such culture, its present fruit products, and such other matters affecting fruit growing, as are worthy of note."

We beg to submit that at the time arranged by us as the best in which to carry out the designs for which your Committee were appointed, the "Epizootic" was raging to such an extent that we could not make such full investigations as we desired, and the subsequent illness of one of your Committee still further disarranged our plans. We have, however, at various times, conjointly and individually been able to visit a considerable portion of this section of country, and obtain notes, which we submit *in extenso*.

The soil is, generally speaking, excellent wheat land, a clay loam, to heavy clay, varying in a few places to sandy loam, and occasionally gravel, but very little of the latter, while such a thing as really bad or barren land is not to be found. The soil is, therefore, capable of the very best results as regards the production of fruit, while the climate is also favourable, except as to a few points, which we shall hereafter mention. With so much in its favour, and lying contiguous to a great market like Toronto, it is a matter of wonder that fruit-growing, especially "for profit," has not obtained to a far greater extent in this section. This, however, is being fast remedied, as we noticed a great many young orchards, some of them of considerable size, which have been planted during the last two or three years, while grapes and small fruits, generally, are receiving an equal share of attention.

We shall first mention the fruits which are *not successfully grown*, and then pass on to those which are largely cultivated. Notably then the PEACH. For the last 15 years all efforts to succeed with this fruit have signally failed, owing, we believe, to the clearing away of the timber of our country, which has caused a change in climate sufficient to destroy all chance of its ever being grown in large quantity.

Occasionally we met with a few trees which yielded a slight return once in several years, and these were always in particularly favoured positions, with abundance of shelter, sunny aspect and light soil. On the farm of Mr. Hugh C. Thomson, which farm is nearly all of a light sandy loam, some trees have done exceptionally well. It is worthy of remark that previous to the year 1855, peaches were grown with little trouble, and in some profusion. Since that time they have been a failure. The same remarks hold good as to QUINCES; they began to deteriorate about the same time, and now but few trees indeed are to be seen, which bear a few specimens in exceptionally favourable seasons, and which are growing in generous heavy soils.

The ENGLISH GOOSEBERRY, as a rule, does not succeed well, and where anything like success is obtained, it is always on the stiffest clay soil. The bushes thrive and stand our winters well enough, but *mildew* on the fruit destroys the crop before it is in a marketable condition, while the ravages of the "Gooseberry Saw-fly" have caused many to abandon any attempt at their cultivation, even on the smallest scale. Now that the advantages of dust-

ing with sulphur and hellebore are beginning to be known and appreciated, we trust shortly to see renewed efforts to bring this excellent fruit under successful cultivation. The varieties which have succeeded best, so far as we could learn are –*Whitesmith, Crown Bob, Ironmonger, Sulphur Yellow, Roaring Lion*, and several of the green kinds.

The *Houghton's Seedling*, an American variety, is largely planted, and does admirably, bearing immense crops; the principal objection to it being the small size of the berry. We hope in time the efforts of the Hybridizer, in raising seedlings, crossed with this variety, or natives of the country, and English varieties may ultimately succeed in overcoming all drawbacks.

Nectarines and Apricots we did not meet with, and know of none being grown in the open air. We have seen the Breda, Purple and Moorpark Apricot trees stand the severest winters for years, but always fail to produce fruit.

The cultivation of the Blackberry is about abandoned. No varieties have yet been introduced which will stand without protection above the *snow line*, and as this line has for some years been about *nil*, the consequence has been *no fruit*. They are so troublesome to cover or protect in winter, that few people will have anything more to do with them.

Of Mulberries, several kinds have been tried at various times, but came to no good. The *White Mulberry*, of use only for its leaves, with which to feed the silkworm stands our winters, and does very well. The production of raw silks is a branch of industry which might be developed and made profitable in this section, and certainly deserves more attention in the warmer and more favoured parts of our climate.

We conclude our list of "failures" with the Foreign Grape. Many varieties have been tried, but have done no good. The nearest approach to success has been with the White Sweet Water.

It must be understood that the foregoing remarks refer to the *growth of fruit in the open air*. While unfavourable in this respect, our climate is eminently suited to the production of Foreign Grapes, Peaches, Apricots, Nectarines, Figs, Plums and Pears, under glass, in vineries and orchard houses. We are glad to notice a greatly awakened interest in the growth of Foreign Grapes in

Cold Vineries,

And have seen and heard of a great many houses in course of erection, or about to be constructed; in fact, it is *becoming fashionable* to have them attached to all houses of any pretensions, and we think with much taste. It has been shown in vineries of some time standing, that this fruit can be produced in quantity and quality, equal to any in North America.

Mr. Philip Browne, of Toronto, has a large number of varieties. His productions at the exhibition of the Electoral Division Society of Toronto this fall, took all the first prizes in every section of the prize list. The following gentlemen also have fine vineries, well established, and annually producing good crops – Messrs. Gzowski, Macpherson, Joseph Leslie, Phipps, Gunther, Mrs. Robinson, *Queen's Park*: Alderman Thomson, *ditto*, and a great many others. All the standard European varieties are in cultivation. Many of the newest varieties from Europe are being introduced. The market price this year opened at $1.50 per pound, dropping to 50 cents when the native hardy varieties came in.

Orchard Houses

Have not received as much attention as vineries, but there are several in this section with which the owners are much pleased. We would particularly mention that of Mr. Hugh Gwynne, nine miles west of Toronto on the Lake Shore road, which is a span roof structure 24 by 16 feet about 10 feet high in the centre, four feet high at the sides with roof of moveable sashes. This house produces *splendid* crops, and has continued to do so for the last six or eight years. It is stocked with Peaches and Nectarines and it must be specially mentioned that they are *planted in the ground*, not in *tubs*, as in all other houses about Toronto. The trees receive no protection in winter, except such as is afforded by the building, not even mulching the roots, and stand perfectly. They are managed with the greatest ease, the mode of cultivation being simply keeping the young growth well pinched in, thinning out the branches early in Spring, thinning the fruit when set, and occasional watering and syring-

ing as required. The roof or sashes are completely taken off about the 20th June, and left off till the approach of severe weather. Mr. Gwynne has also a fine Vinery 30 by 20 feet, producing well.

Planting for Shelter,

Especially a systematic planting, on the north and west sides of farms for orchard shelter, is treated with an indifference, which we cannot but notice with the deepest regret. The original timber has been almost entirely swept away without any attempt at leaving *belts* for shelter, or replacing by subsequent planting. Some few farms we noticed whose owners were waking up to the importance of remedying this state of things, but not to the extent which this subject demands. The best sheltered orchard we met with, and we think the best in the section is, that of Colonel O'Hara just outside of the western limits of the city. It is completely protected on all sides by a belt of trees, all transplanted trees, and all our native white pine. Most of the trees are now of a large size, and a fine shelter is produced, in consequence of which good crops of fruit are annually gathered, even in the worst fruit years.

We now come to the fruits that can be grown in the open air with the greatest success, where the peculiar requirements of each sort of fruit are complied with. These are apples, pears, cherries, plums, native hardy grapes, currants, raspberries and strawberries.

The Apple

Has been extensively planted, though there is room for much further development without any danger of overcrowding the market—in fact the market can really never be overstocked with good keeping varieties, properly packed for shipment, as the demand in the non-producing portions of our own Province of Ontario, the lower Provinces and Great Britain will always absorb our surplus. We have heard of one dealer in Toronto, who has this year gone to England with over two thousand barrels.

The finest orchards coming under our notice were in the Township of Etobicoke, within a short radius of the New Agricultural College farm. This township is becoming famous for its fine apples, and has, this year, we consider packed as many for shipment abroad as any township in Canada.

The soil is principally a fine clay loam, on which a considerable quantity of limestone is found. We have seen grown here specimens of the "Swayzie Pomme Grise," rivalling in appearance and quality those of the famous Niagara districts. Mr. S. Wood, at Islington, is an intelligent and careful orchardist. His extensive orchard bears marks of the best attention, and the fruit thereof has for years taken prizes at the keenest Pomological competition. Mr. Watson, near Islington, is also an extensive grower and dealer in apples. Near the same neighbourhood the following gentlemen possess good orchards, worthy of particular mention: Mr. Edward Stock, Mr. Wm. Burgess, Mr. D. McFarlane, Mr. W. Wilson and Mr. Fisher. With Mr. Fisher the "Yellow Bellflower" does unusually well, several large trees having for years averaged 6 to 7 barrels each per annum. About the village of Weston we noticed good orchards, particularly those of Messrs. John Shuttleworth and Wm. Shuttleworth. Mr. John Shuttleworth has some fine seedlings, two or three of which are very highly thought of and having been placed under propagation are likely to come into general cultivation. On Yonge street two miles from Toronto, Mr. John Forsyth has an excellent orchard, and his fruit has borne off many prizes at various exhibitions. A mile further, and the extensive young orchard of Mr. James McCarter is to be seen. This gentleman is training all his trees with *low heads*, branching not more than 2 to 3 feet from the ground. His trees are all the picture of health and are just coming into bearing. Mr. John Whiteside, east of Toronto, near Agincourt, has a splendid young orchard just coming into bearing, which receives from its owner the most careful attention in every detail. We must also commend the orchards of Mr. Thomas Brown, on the Don and Danforth road, Mr. Thos. Whiteside on the Canada road, Mr. Wm Walton, Mr. Isaac Stobs, Mr. George Taylor, and Mr. James Laurie, in the Township of Scarboro'. Many orchards throughout the whole section are met with, evidencing the greatest neglect, especially in the matter of *pruning*. It is very desirable that a better knowledge of this important adjunct to fruit-growing should prevail. We find a tendency on the part of those who are now planting largely for market to confine themselves to a very few choice varieties, instead of planting a great number of kinds, as used to be the rule some years ago. The six favourite varieties are apparently Baldwin, R

I. Greening, Northern Spy, King of Tompkins County, Golden Russet, and Fameuse; and where it is desirable to extend the list the choice is usually from the following:—EARLY—Early Harvest, Red Astrachan, Keswick Codlin. AUTUMN:—Duchess of Oldenburgh, Fall Pippin, (commonly named Holland Pippin), Alexander, Gravenstein, St. Lawrence, Ribston Pippin. WINTER:—Yellow Bellflower, Pomme Grise, Roxbury Russet, Swaar, Esopus Spitzenburg, and Wagener.

A great number of other varieties are to be found in the section, some of them of much excellence, but now in little demand by planters. In concluding our remarks on the Apple we would say that Mr. Forfar, of Scarboro,' has several seedlings of merit, some of which have been laid before the "Seedling Fruit Committee" of your Society. The *best* seedling apple however, which came under our notice, was raised by Mr. Wm. L. Stotts, of Markham. It is evidently a seedling from the Roxbury Russet, possessing in appearance many of its characteristics. Its keeping qualities are first class, and few apples now in general cultivation can compete with it in point of flavour. Mr. Stotts says the tree is perfectly hardy, and a profuse bearer.

PEARS

Are planted in considerable number, but nothing like an extensive Pear Orchard has come under our notice, except that of Mr P. McGregor, hereafter mentioned. Mr, Henry Brown, of Yonge-street, has a goodly number of young trees of the most approved varieties just coming into bearing, and which look exceedingly thrifty. Mr. P. McGregor, near the north-western limits of the city, planted out some 300 trees which are doing well. They were planted about 6 years' ago, and are now coming into bearing. A few trees are to be found in nearly every garden and orchard, but the fruit is not produced in anything like the quantity which its great merits, high price in market, and popular demand entitle it to.

There are very few varieties which do not stand the winter and thrive well, and like the apple a very great number of varieties have been planted, but popular favour is fast settling upon a very limited number. The favourites are, Flemish Beauty, Bartlett, Duchess d'Angouleme Louise Bonne de Jersey, Belle Lucrative, Buffam, Sheldon, Beurre Diel, Beurre Clairgeau, Vicar of Winkfield, and Winter Nelis. There are those who are partial to some or all of the following varieties—Beurre Giffard, Osband's Summer, Tyson Beurre Superfine, Beurre de Waterloo, Grey Doyenne, Swan's Orange, Lawrence, Beurre Easter, Glout Morceau, Josephine de [illegible]alines, and Jaminette. Dwarf Pears on the Quince stock succeed well where they receive the requisite attention in the way of proper pruning, proper manuring, and thinning the fruit.

CHERRIES

Have not been so largely planted as pears, probably because it has been found that on rich clay soil they burst the bark badly, and thus soon decay. On lighter soils, however, they do very well. The largest plantations we saw were those of the Messrs. Pope, who have set out several hundred. There is no fruit which responds so generously as this to a careful protection by shelter, and when this is better understood and acted on, plantations will be largely increased. The following varieties are in cultivation:—Kentish or Canadian Red Cherry, Black Eagle Black Tartarian, Elton, Gov. Wood, Yellow Spanish, Butner's Yellow, Cleveland Bigarreau, Napoleon Bigarreau, Rockport Bigarreau, Elkhorn, Belle Magnifique, Mayduke, Reine Hortense, and English Morello.

PLUMS

Are largely planted, but the "Black Knot" and Curculio on neglected trees, *and there are a good many such* prevent much of a return in the way of fruit. Where, however, intelligent steps are taken to check the ravages of these pests, the cultivator is usually well rewarded for his labour. We visited the farm of Mr. Brownlie, east of Toronto, near Danforth P. O., on which is a fine plantation of young trees just coming into bearing condition. Mr. Brownlie by the judicious and timely use of the knife, keeps his trees perfectly free from "Black Knot." He has also quite a number of large trees in full bearing. His favourite sorts are the Yellow Egg (or Magnum Bonum) and Yellow Gage. The Yellow and Green varieties of the Plum are found to be freer from the Black Knot than the Red and other shades. We met with the following varieties in addition to the two kinds mentioned: Bradshaw, Coe's G.

Drop, Duane's Purple, Denniston's Superb, Fellemberg, Green Gage, Imperial Gage, Jefferson, Lombard, McLaughlin, Smith's Orleans, Pond's Seedling, Victoria and Washington.

Hardy Native Grapes

Have of late years received an unusual degree of attention, and every new variety, as it has been introduced, has been eagerly bought and planted. At Cooksville, just outside the limits assigned to your Committee, one of the largest, if not *the largest* vineyard in Canada is established, being about forty acres in extent. It is stocked with a large number of varieties, the Clinton being the leading kind in point of quantity. A description of this vineyard has several times appeared in print, and we think it needless to reproduce one here. Mr. Brownlie, Danforth Road, has a good plantation of about 400 vines, partly trained on trellis and partly to poles. The "Eumelan," one of the sorts distributed by your Society to its members—has this year fruited well with him, and he speaks in the highest terms of its merits. He states that, if his choice were confined to two varieties, he would choose the *Delaware* and *Eumelan*. Mr. John Forsyth, of Yonge Street, has over an acre in grapes, and is very successful in their growth. His fruit has taken many prizes at exhibitions. With Mr. Philip Armstrong, one mile north of Toronto, on Yonge Street, the fruit ripens earlier than with any one we have conversed with. His vines are planted in a fine clay loam on a side hill, facing the south. The Concord is an especial favourite with him, as with a great many other cultivators. At Markham, twenty miles east of Toronto, the Hon Mr. Reesor has established a large vineyard, if we are correctly informed (we regret we had not an opportunity of visiting him) numbering about 5000 vines. He trains his vines very low, so that the fruit is all produced within three feet of the ground, and is well pleased with his success.

The varieties we have noticed most largely in cultivation, are Delaware, Concord, Hartford Prolific, Clinton, Creveling, Salem, and Rogers' 15 and 19.

Currants.

It was feared two or three years ago that the red and white varieties of this fruit would be driven out of cultivation by the "gooseberry sawfly," or "currant worm;" but now that it is known with what little trouble this pest can be kept under by the use of white powdered hellebore, renewed attention is being paid to its culture, and the quantity of fruit disposed of this summer in Toronto markets, at very profitable prices, was really enormous. The demand for black currants could not be met this year, and the *wholesale* price ranged from $4 to $4.50 per bushel. We were allowed the privilege of tasting a *wine* made from black currants, and now two years old, which was perfectly delicious, and strongly resembled, in taste and colour, the finest old Port. The favourite varieties in cultivation are Red Grape, Shortbunch Red, Red Cherry, White Grape, White Dutch, and Black Naples.

Raspberries.

Are grown in every private garden in the district, and every market gardener near the City has a "patch" to fruit for market. Some of these are large, and the owners consider the fruit a very profitable crop. The two largest plantations we saw are those of Mr. Denison, near Brockton, and Mr. John Hamilton, near the north eastern limits of the city—the plantation of the former being about four acres, and that of the latter two acres, in extent. The varieties most largely grown are Franconia, Philadelphia, Red Antwerp, Brinckle's Orange, and the American Black Cap. The Philadelphia and American Black Cap stand perfectly without protection in the winter—the other varieties are much better for being protected.

Strawberries

Are also largely cultivated, especially for market, and prices obtained have always heretofore been profitable. The most largely grown sorts for this purpose are the Wilson's Albany and Triomphe de Gand, notably the former, which is the most productive berry known. Jucunda is a good cropper, and a splendid berry on rich clayey soils. The Agriculturist also does well on same kind of soil. Downer's Prolific is a very hardy plant here, a good bearer, and large berry, but is too soft to bear carriage to market. Nicanor is liked by many growers for its several good qualities. Besides these sorts, there are many others to be found in private

gardens, but none which can be said to excel them. In the neighbourhood of Port Credit are some large plantations, and this locality is beginning to rival Oakville in this respect. At the Highland Creek there is a five-acre field which produces extraordinary crops.

Crab Apples

Should have been mentioned in connection with our remarks on the apple. Being very hardy, they succeed admirably, and never fail in any season to bear large crops. The varieties principally cultivated are Transcendant, Montreal Beauty, Golden Beauty, and Yellow Siberian.

The Fruit Crop

This year of grace 1872, has not been what may be termed a "good fruit year." Pears and currants are the only fruits that have done well; all others have been below the average. Prices have, however, ruled high, which, to the "growers for profit," has nearly made up the deficiency in quantity of fruit.

In concluding this Report, we would mention that we met with a great many complaints from parties who had purchased trees from an American firm of *tree dealers* (who are not themselves the *growers*), who brought into Canada from the United States, last spring, a very large number of fruit trees. From investigations made by us, we are informed that the trees were principally grown in Southern Pennsylvania. They were of rank growth and handsome appearance, but not being suitable to our climate, fully three-fourths of them have died.

All of which is respectfully submitted.

GEO. LESLIE, Jun.
JOHN GRAY.

REPORTS ON SEEDLING FRUITS.

On Seedling Apples.

These were received from Mr. J. W. Johnston, of Campbellford.

The committee beg to report first, touching the seedlings raised by Mr. D. Johnston of Campbellford: That they are of medium size, splashed and marked with light and dark red, yellow on ground with a dark red cheek where exposed to the sun. Stem very short; set in a wide cavity of medium depth; Calyx closed and set in shallow corrugated basin. The apple has a diameter one-third greater in its transverse section, than from stem to Calyx. Core large for size of fruit, containing a medium number of sound seed which rattle within the core of the apple when shaken. Flesh, white, juicy, with a mild pleasant, sub-acid and agreeable flavour, in general appearance resembling the Fameuse.

We would recommend a bonus of five dollars, to be given to Mr. D. Johnston, on his furnishing the required information to the Secretary of the Fruit Growers' Association, that the above described variety is a seedling raised by himself.

As to the Russets submitted to us, received per same package from Mr. O'Reilly, near Colborne, also supposed to be seedlings, we believe them to be small and poor specimens of the Golden Russet of Western New York.

In reference to the apple from Mr. Diamond of Campbellford, it is of large size, handsomely striped and resembles somewhat the St. Lawrence, but over ripe and not in a condition to enable us to form a correct judgment of its merits.

All of which is duly submitted,

W. Holton.
W. H. Mills.
Robert Burnet.

Hamilton, 13th February, 1872.

Mr. D. Johnston of Campbellford, says of it, that his father planted some apple seeds and raised from them the tree that bore this fruit, and other trees. This tree has been in bearing for twenty-nine years, and is a hardy and productive tree, bearing every year, and

yielding last year fifteen bushels of apples. The fruit is good for either kitchen or table use, and commands as high a price in market as any of the grafted sorts.

On Seedling Cherry.

This cherry was received, June 22nd, from James Dougall, Esq., of Windsor.

It is a black sweet cherry, partially mouldy, and in such condition as to make it difficult to report with entire justice, touching its merits. We regret that Mr. Dougall had not notified the Fruit Growers' Association, so that a committee might have been appointed to visit the tree in bearing, and we hope he may do so another season. The combined earliness and fine sweet flavour which may be fairly compared in flavour and size to later varieties, make it most desirable, that this new seedling so much like the old Black Hart, should have a full and careful report. We are of opinion that should the tree bearing this extremely early fruit, which is stated to ripen before the early Purple Guigne, prove hardy and prolific, it must take its place as a decided acquisition to our list of cherries.

Wm. H. Mllls.
Robert Burnet.

On Seedling Apples Exhibited at the Winter Meeting.

Mr. Holton of Hamilton, exhibited a seedling apple, below medium, pretty, not high flavoured.

D. McPherson, Front Lancaster, sent two samples, numbered one and two, but they were over ripe and in bad order.

A. Morse, Smithville, brought some seedlings. Number one was of large size, striped, firm, nearly sweet, a good keeper. Number two was lacking in flavour.

John McGill, of Oshawa, exhibited an apple of medium size, striped, of mild and pleasant flavour.

D. Hammond, Sheridan, showed one apple, handsome in appearance and of pleasant flavour.

Joseph Neff, Port Colborne, brought another, but the specimens were in bad condition.

A. C. Attwood, of Vanneck, sent again some apples which he had previously brought to the attention of the committee, supposing them to be a new variety, but it now appears that it has been more widely disseminated than was supposed, samples having been also received from Ancaster and London, as an imported sort. It is therefore not entitled to be brought in competition for the prize offered for Canadian seedling apples.

On Seedlings sent to the Fruit Committee.

James Walsh, Birkhall, raised some seedling apple trees which bore fruit this season, one of which proves to be a Red Crab. He did not sow any seed from the Crab, and is at a loss to account for its appearance in his batch of seedlings. This new variety of Crab in point of size and general appearance does not seem to be any improvement on known and generally cultivated varieties.

D. Hammond, of Sheridan, sent an apple. It is medium to large, flattened conical, smooth, greenish white in the shade, mottled with crimson, and splashed with deeper crimson; stem long and slender, set in a broad, open and deep cavity; calyx closed, in a shallow, slightly corrugated basin; flesh white, fine grained, very juicy, crisp, pleasant sub acid, quality *good*. Ripe, October.

A. Morse, Smithville, sent again samples of his large green apple. As this apple can only be valuable for cooking, and is in use at the same time with other well known fruits of much finer appearance, and fully equal if not better in quality, the Committee are of opinion that it is not desirable to disseminate it.

J. Cowherd, Newport, sent several of his apples.

No. 1. Large, form varying from nearly conical to oblate, skin smooth, pale greenish yellow, deep crimson on the exposed side, striped and splashed with darker crimson, the crimson splashes continuing on the shaded side. Flesh nearly white, with an occasional

pink tinge; not very fine grained, juicy, crisp, sub-acid, not rich nor high flavoured; quality *good*; stem, very short, stout, in a deep, russeted cavity; calyx closed, segments reflexed, in a shallow, slightly corrugated basin. Ripe, end of September.

No. 32. A little above medium, oblate, skin smooth, dull crimson in the sun, greenish yellow in the shade. Stem stout, 1½ inches long, set in russeted, medium cavity. Calyx closed, in a shallow, corrugated basin. Flesh, yellowish white, fine grained not very juicy, acid; quality *poor*. Ripe, end of September.

Mr. Cowherd says of these seedlings:

"No. 1. Is 23 years old, very hardy, growth strong and spreading; a regular bearer.

No. 30. A fine, free grower; first time bearing.

No. 31. Growth spreading; first time bearing.

No. 32. Growth strong, thin, and spreading; been in bearing three or four years."

Mr. Hammond says of the apple sent by him:

"I send by express some seedling apples (fall fruit) for competition. They are a very fine cooking apple, just now in season for picking, and if put by for a few days, they are a fine dessert or table apple. The tree is a very hardy and fine growing one, good bearer, promises to be very productive. The original tree is (or was) in the neighborhood of St. Catharines, about six miles south-west of that place, in the orchard of Mr. George Oille, from which I obtained a sprout some few years ago."

Smith's Golden Pippin.

Fruit large, twelve inches in circumference, ovate in form, skin smooth, yellowish green, with a warm carmine blush on the exposed side, breaking into faint marblings of carmine at the edges. Stem short, set in a deep, narrow cavity, under a projecting lip, which lip is usually thinly covered with russet. Eye closed, in a shallow, somewhat corrugated basin. Flesh, yellowish white, fine grained, juicy, sub-acid, not high flavoured; quality *good*.

All of which is respectfully submitted,

D. W. Beadle,
W. H. Mills,
R. Burnet,
W. Saunders.

On the Seedling Plum Exhibited by A. Glass, of Guelph.

The Committee having examined this plum, beg to report that the tree seems to be of a very healthy habit, a vigourous upright grower, holding its foliage quite late in the season, the leaves are very large, thick, of a dark green colour, the upper surface very glossy. The fruit is very large, oval, dark purple, covered with a thin bloom, separating freely from the stone. Flesh, not very fine grained, juicy, sweet, not high flavoured; quality, good to very good, keeping remarkably well.

We take the liberty of suggesting to the Directors that, if arrangements can be made with Mr. Glass to supply the requisite number of trees, this plum is worthy of being distributed among the Members of our Association, for more extended trial.

We append Mr. Roy's letter, one of the Committee appointed to examine this fruit, who was unable to meet with us.

R. Burnet,
Geo. Leslie, Jr.,
D. W. Beadle.

Letter of S. Roy, Berlin, Relating to the Glass Seedling Plum.

"Berlin, 23rd October, 1872.

D. W. BEADLE, Esq.

Dear Sir,—Having fruited the Glass seedling plum the past season, I must say that I am well pleased with it, and have no hesitation in stating that it would be quite an acquisition in any collection, as it is much superior to many of the same class in general cultivation.

Although not of the *best* quality, its productive character and general healthiness will make it a favourite with market gardeners, as the fruit is well adapted for canning.

The glossy appearance of its foliage indicates that it belongs to the Damson class, of which it certainly is a monstrous specimen. I think it is distinct from others of the same type, of which I have two specimen trees, viz: the Quackenbush and Hustand blue, obtained from my neighbor, Mr. Schofield—none of which come up to it in size of fruit—this being the only distinctive difference that I can observe among the three varieties, all of which are very hardy and healthy trees, and, as a general thing, not subject to black-knot—rather troublesome among Damsons—as a rule.

Whether it is distinct from any other variety in cultivation I know not; but, be that as it may, I have no hesitation in stating that its general distribution throughout the country will be of greater benefit than many of a finer quality, with a doubtful reputation as to hardihood, of which the McLauchlan was a notable instance. I tell you it takes an iron constitution in a tree to stand the severity of the winters in the central Counties, consequently it requires greater care and greater ingenuity to be successful in fruit growing here than with you.

I may further remark that the Glass seedling is a superior plum in every respect to the Duane's purple, as that variety is very subject to leaf-blight here, and it is also superior to the Diamond, as that tree is too tender to be grown successfully here.

I am yours truly,

SIMON ROY.

PRIZE LIST.

PERMANENT PRIZES.

First.—AN HONORARY MEDAL to the originator of any new fruit which, having been thoroughly tested for a series of years, is found to be worthy of being placed among the fruits of its class for cultivation in Ontario.

Second.—FIFTY DOLLARS for the best Canadian Seedling late Winter Apple, to be at least equal to the old popular varieties now in cultivation.

Third.—THIRTY DOLLARS for the best Canadian Seedling Harvest Apple of like merit.

Fourth.—TWENTY DOLLARS for the best Canadian Seedling Autumn Apple of same excellence.

ANNUAL PRIZES.

PRIZES FOR 1873.

First.—Awards may be made by the Committee on Seedling Fruits of sums *not exceeding Ten Dollars* for any seedling fruit that may be submitted to them during the year which they may deem worthy, although they may not yet be prepared to advise the Directors to bestow either of the permanent prizes. Such award shall not in any measure disqualify the exhibitor from eventually receiving, for the same fruit, one of the permanent prizes.

Second.—TEN DOLLARS for the best Winter Seedling Apple, fruit to be grown in 1873, and exhibited at the succeeding winter meeting of the Association.

Third.—FIVE DOLLARS for the best Autumn Seedling Apple to be shown at the next annual meeting of the Association.

Fourth.—FIVE DOLLARS for the best Summer Seedling Apple, to be sent when in condition for examination to the President, Rev. R. Burnet, Hamilton, all charges prepaid, and to be by him submitted to the Committee.

Fifth.—FIVE DOLLARS for the best Seedling Winter Pear, fruit grown in 1873, and exhibited at the succeeding winter meeting of the Association.

Sixth.—FIVE DOLLARS for the best Seedling Autumn Pear, to be shown at the autumn meeting.

Seventh.—FIVE DOLLARS for the best Seedling Summer Pear, to be sent, when in

condition to be examined, to the President, Rev. R. Burnet, Hamilton, carriage prepaid, for submission to the Committee.

Eighth.—FIVE DOLLARS for the best Seedling Plum to be sent to the President, when in season.

Ninth.—FIVE DOLLARS for the best Seedling Peach, to be sent to the President, when in season.

Tenth.—FIVE DOLLARS for the best seedling Grape, of any colour, to be sent to the President, when ripe.

Eleventh.—FIVE DOLLARS for the best Seedling Strawberry, to be sent if possible, to the summer meeting; if not possible, then to the President.

Twelfth.—FIVE DOLLARS for the best Seedling Raspberry, to be sent, if possible, to the Summer Meeting; but if that be impracticable, then to the President, when in season.

Thirteenth.—FIVE DOLLARS for the best Seedling Gooseberry that is not subject to mildew, whether of European or American parentage, or a cross between them; to be sent to the Summer Meeting, if possible, otherwise to the President.

Fourteenth.—FIVE DOLLARS for the best Seedling Blackberry sufficiently hardy to endure the climate of Ontario. Fruit to be sent to the President, when ripe.

Should two or more Seedlings of equal merit be shewn, the prize shall be awarded to each. The Committee shall in all cases withhold the prize altogether, if they do not deem the fruit worthy.

A Seedling to which one of these annual prizes has been awarded, cannot compete a second time in this class, but may compete in the class of Permanent Prizes.

A Seedling Apple which has received one of the money prizes in the class of Permanent Prizes cannot again receive a money award, but may be offered in competition for the Honorary Medal.

CERTIFICATES OF MERIT.

Seedling fruits which have received any of the foregoing money prizes may be offered in competition for certificates of merit.

There are two certificates of merit: the highest is known as the FIRST CLASS CERTIFICATE, the other as the SECOND CLASS CERTIFICATE.

The Committee will report to the Directors those fruits which they think to be worthy, stating which certificate they think it to be worthy to receive. The Directors will then make full inquiry and examination concerning the character of the fruit, including size, appearance and quality, the habit, vigour, health, hardihood and productiveness of the tree or plant, and its general adaptation to the climate of Ontario, and bestow such certificate, if any, as they may think it worthy to receive.

A fruit which has received a Second Class Certificate may afterwards receive a First Class Certificate, if thought worthy; and a fruit which has received a First Class Certificate may be offered in competition for the Honorary Medal.

The Honorary Medal may be given any number of times to the same person for different fruits, but only once for any one fruit.

Seedling fruits offered in competition for these prizes must be shown in quantities of not less than *one dozen specimens* of each sort, if they be Apples, Pears, Plums or Peaches; if Grapes, not less than *three bunches;* if Berries, not less than *one quart.* Each sort or variety must be accompanied by a statement, signed by the person sending the fruit, setting forth the origin of the tree or plant, if known; if the origin be unknown, then so much of the history of the tree or plant yielding the fruit sent as may be ascertained—its vigour, hardihood and productiveness, the character of the soil in which it is growing, and what, in the estimation of the sender, are the peculiar excellencies of the fruit. This rule *must be observed in all cases*, whether the fruit be shewn at the meetings of the Association or sent to the President for the examination of the Committee.

ESSAYS.

First.—TWENTY-FIVE DOLLARS for the best essay on the cultivation of the Plum, including a short description of the varieties with which the writer is acquainted, and his opinion of the merits of each.

Second—TWENTY-FIVE DOLLARS for the best essay on the cultivation of the Pear, including the mode of keeping and ripening, together with a short description of the varieties known to the author, and his opinion of the merits of each.

Third.—TWENTY-FIVE DOLLARS for the best essay on how best to increase the interest in fruit growing in Ontario.

Fourth.—TWENTY FIVE DOLLARS for the best essay on the impositions of dishonest tree-pedlars.

Essays to be sent to the Secretary on or before the first day of November, 1873, each bearing a motto, and accompanied with a sealed note having the same motto endorsed on the outside, and containing within the name of the author. Judges may withhold the prizes, if they do not think the essays worthy.

DISTRIBUTION OF FRUIT TREES.

The Directors desire to intimate to the members of the Association, that they are making arrangements to distribute trees &c. as follows :—

In 1873.
The Grimes Golden Pippin Apple.
The Clapp's Favourite Pear.

In 1874.
The Downing Gooseberry.
Barry (Rogers No. 43) Grape.

In 1875.
The Swazie Pomme Grise Apple.
The Goodale Pear.

In 1875.
The Tetofsky Apple.
The Glass Seedling Plum.

These will be distributed to all members, new and old, who shall send their annual fee of One Dollar to the Secretary, on or before the first day of March in each year.

The object of making this distribution is to ascertain how valuable these several varieties may prove to be in the localities to which they are sent ; hence the distribution is made on the condition that those receiving them will make a yearly report to the Secretary thereon, for five years.

Will our members be so good as to remember that, by accepting these trees, they pledge themselves to take care of them, not so much for their own personal advantage, as for the benefit which their trial of them will be to others.

NEW MEMBERS.

It being the object of this Association to disseminate information concerning fruits and their culture, the Directors wish every member to make his neighbours acquainted with the benefits to be derived from joining the Fruit Growers' Association of Ontario.

In order to make some return to those who take the trouble to procure new members, the Association instructed the Directors to send, free of expense, an additional allowance of trees for every *five new members* obtained. The Directors, therefore, give notice that they will send to every member who sends to the Secretary the names and fees of new members, on or before the first day of March in each year, an additional allowance of trees for every five new members obtained, with the privilege of selecting instead, if they prefer, any trees, plants, vines, shrubs, roses or flowers which may be obtainable, to the value of the extra allowance to which they may be entitled. This will give members an opportunity of obtaining any particular plant they may desire, and to those ladies who are or may become members, the privilege of gratifying their taste for home adornment. And as

some members have urgently requested that the CANADIAN FRUIT, FLOWER & KITCHEN GARDENER should be distributed instead of trees, the Directors offer to send, free of expense, a copy of that work to each member who shall obtain *fifteen* new members, and desire to have the book instead of the allowance of trees.

Three thousand copies of the Report for 1872 will be printed. A copy will be sent to all who are now members, and also to those who may become members, in the order in which their subscriptions are received, until the edition is exhausted.

It may happen that the increase of members shall be so large as to render it impossible to procure a sufficient number of the particular kinds which are being sent out to supply all with those sorts; in that case, some other choice variety of the same fruit will be sent instead. Those who send in their subscriptions after the first of March, must expect to be disappointed, for it is absolutely necessary to order trees by that time in order to procure them. No single nursery firm has yet been found who could furnish all the trees required, hence it has been necessary to obtain a part in one place and part in other places, involving extended correspondence and a considerable lapse of time. Please, then, to send in your subscriptions not later than the first day of March.

CORRESPONDENCE.

Correspondence has been opened with the Royal Horticultural Society, England, with a view to an exchange of grafts and cuttings of desirable fruits. The reply received from the Society was most cordial, and was accompanied with a consignment of grafts and cuttings, which arrived in good order.

Prof. Dyer kindly says, in his letter of March 1st, 1872: "The Royal Horticultural Society will have great pleasure in rendering you any further assistance in its power to enable you to carry out the objects you have in view. May I ask you to be so good as to favour me with either a list of your desiderata, or a catalogue of the kinds you have. This will enable us to send you, towards the end of the year, a further contribution. We shall be glad to receive in exchange any kinds which you may think it desirable for us to make a trial of. They should be sent to Mr. Barron, Royal Horticultural Society's Gardens, Chiswick, London."

A full list of the different varieties of Apple, Pear, Plum, Cherry and Hardy Grape, of which scions or cuttings could be furnished by this Society, has been sent to Prof. Dyer.

Correspondence has also been opened with the Department of Agriculture at Washington, and an exchange of Reports effected, which may be followed by an exchange of scions and cuttings.

We also maintain correspondence with our sister Society in Nova Scotia, and make interchanges of scions and cuttings.

From the cuttings sent by the Royal Horticultural Society, plants have been raised of the following kinds of Exotic Grapes, which will be furnished, without charge, to any member who will apply to the Secretary for them. Their names are as follows:—Muscat of Alexandria, Royal Muscadine, Chasselas Vibert, Frankenthal, Crawford Muscat, Black Monukka, Gros Guillaume, Black Prince, Chasselas Rose de Falloux, Dutch Hambro, Royal Ascot, Gros Colman, Alicante, Lady Downe's Seedling, Golden Hambro.

Next year, we will be able to furnish a few trees of the several kinds of Apple of which scions were also received from the Royal Horticultural Society. A list of the names of those that can be supplied will be given in our next Report.

APPENDIX (E).

ANNUAL REPORT

OF THE

ENTOMOLOGICAL SOCIETY OF ONTARIO.

1872,

INCLUDING A REPORT ON SOME OF THE NOXIOUS, BENEFICIAL AND COMMON INSECTS OF THE PROVINCE OF ONTARIO.

PREPARED FOR THE HONOURABLE THE COMMISSIONER OF AGRICULTURE, ON BEHALF OF THE SOCIETY.

BY

THE REV. C. J. S. BETHUNE, M.A.,

Head Master of Trinity College School, Port Hope; President of the Entomological Society of Ontario; and Editor of the Canadian Entomologist;

WILLIAM SAUNDERS,

Vice-President of the Entomological Society of Ontario; and

EDMUND BAYNES REED,

Secretary-Treasurer of the Entomological Society of Ontario.

REPORT OF THE ENTOMOLOGICAL SOCIETY OF THE PROVINCE OF ONTARIO, FOR THE YEAR 1872.

To the Honourable the Commissioner of Agriculture,—

SIR,—In compliance with our Statute of Incorporation, I have the honour to submit the Report of the Entomological Society of Ontario for the year 1872.

The annual meeting of the Society was this year held at the City of Hamilton, when the various reports were read, and the officers for 1873 duly elected.

I also beg leave to submit herewith a Report on some of the Noxious, Beneficial, and Common Insects of this Province, which has been prepared by the Rev. C. J. S. Bethune, Mr. William Saunders and myself, on behalf of the Society.

The publication of the CANADIAN ENTOMOLOGIST is still regularly continued, and the value of its pages has been greatly enhanced by the contributions of Entomologists both on this continent and in England, whose learned researches have rendered them authorities in their several branches of this science.

I have much pleasure in being able to report an increase in our membership, which has now reached 300, and that under the fostering care of your Department a more general interest in practical Entomology seems to be making its way steadily among the agricultural community.

To Canadians generally it must be gratifying to know that the course pursued by your Department in encouraging the efforts of the fruit-grower, and in disseminating a knowledge of the various insect friends and foes, has called forth warm commendations from several of the English scientific papers, and strong suggestions have been made that a similar course should be pursued by the Home Department.

I have the honour to remain,
Your obedient servant,
EDMUND BAYNES REED,
Secretary-Treasurer of the Entomological Society of Ontario.

London, Ont., Nov., 1872.

ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO.

The second annual general meeting of the Society was held at the Court-House, Hamilton, Ontario, on Thursday Evening, September 27, 1872.

The President, the Rev. C. J. S. Bethune, M.A., in the chair.

The minutes of the previous meeting were read and confirmed.

The President's address, the report of the Council, and the financial statement of the Secretary-Treasurer were then read, and on motion duly received and adopted.

ELECTION OF OFFICERS FOR 1873.

The following Officers were then elected:

President.—Rev. C. J. S. Bethune, M.A., Trinity College School, Port Hope, Ont.

Vice-President.—W. Saunders, Esq., London, Ont.

Secretary-Treasurer.—E. B. Reed, Esq., London, Ont.

Council.—Prof. J. Macoun, Belleville; R. V. Rogers, Esq., Kingston; J. M. Denton, Esq., London; J. Pettit, Esq., Grimsby, A. Macallum, Esq., Hamilton.

Auditors.—J. H. Griffiths and Chas. Chapman, London.

On motion duly carried, it was resolved that the sum of $100 be paid respectively to the President as Editor of the ENTOMOLOGIST, and the Secretary-Treasurer, for their services during the year 1872.

The state of the Library was discussed, and suggestions made with reference to its management.

The subject of the Report on Insects was laid before the meeting, and information elicited from the members respecting the prevalence of any special damage caused in their respective districts by the attacks of insects on field or garden crops. A vote of thanks was passed to Judge Logie for his courtesy in granting the use of his room for the annual meeting.

The meeting then adjourned.

REPORT OF THE COUNCIL.

In presenting the Second Annual Report, the Council feel highly gratified at the measure of success which has attended the Society during the past year. Confined, as its membership naturally is, to a small numerical portion of the public, it is yet very evident from the increased number of new members that the Society's efforts are appreciated, and that the science of practical Entomology is being gradually forced upon the notice of our most intelligent agriculturists and horticulturists. Fifty-four new members have entered our ranks this season, several of them being entomologists of some reputation. Our total number is now 300, made up as below:—

Ontario general	70	
London Branch	51	
Kingston	15	
	136	in Ontario.
Quebec Province	14	
Nova Scotia	3	
British Columbia	1	
	154	in Canada.
United States	138	
England	8	
Total	300	Members.

The Quebec Branch has ceased for the present to exist; but we hope shortly to see it reorganized.

Our membership in the United States is steadily increasing, and from this source we derive much substantial assistance both to our funds and our magazine. The publication of the CANADIAN ENTOMOLOGIST is still continued; the fourth volume is now nearly completed. The ENTOMOLOGIST is at present the only regularly-issued periodical on this Continent devoted to the science of Entomology. We must not omit to return our hearty thanks to those friends who have so kindly sent material to the editors, and by whose active assistance the latter have been able to keep up the good reputation of our periodical. Especially would we make honourable mention of Mr. V. T. Chambers, of Covington, Kentucky, whose admirable papers on the Micro-Lepidoptera have attracted much attention both here and in England.

Some of our members have expressed an opinion that the ENTOMOLOGIST is too exclusively scientific, and that its pages have not been made sufficiently interesting to those amongst us who are at present only beginners in the study of the science. The Council feel that there is some justice in this remark, and we would suggest to our successors that perhaps it may be feasible to publish, in the pages of the ENTOMOLOGIST, the descriptions of our native Lepidoptera, taken from the original sources, as far as practicable, and thus give some assistance to those whose want of proper books, or inability to get even a reference to them, is an insuperable barrier to their working out for themselves the names of the various species in their collections.

The great drawback to the Society's efforts is a want of sufficient funds to procure the requisite scientific works on Entomology, many of which are very rare and costly, and also a proper supply of engravings and electrotypes of the various insects treated of. It is very difficult to meet the latter demand, owing to the want of a good artist who is well versed in the science, and able to give a correct representation of the originals; at the present time we have to send to the United States for the greater part of our wood-cuts and electrotypes.

The Council appointed a delegation to confer with the Commissioner of Agriculture on the subject of an increased grant, and there is every reason to hope that the result will be successful. In their application they will be strongly supported by the Fruit Growers' Association, who are making a similar appeal.

We have much pleasure in referring to the very generous donation of fifty dollars towards our library fund by the Fruit Growers' Association. It becomes indeed more manifest, as each succeeding year rolls on, that the cordial feeling existing between these two sister Societies is a strong element in their success, and furnishes fresh proof of the necessity of their continuing the work in the same friendly manner. We sincerely hope that this feeling will always continue.

The financial statement will, we think, be found satisfactory to the members.

The Council have thought it advisable to rent rooms at London for three years from July 1, 1872, at $80 per annum; of this the London Branch pays $30. We would here suggest and recommend that the expenses of fitting it up in a suitable manner be borne by the Society. The estimated cost is about $100. It must not be forgotten that hitherto the Society has had no proper place for keeping the stock of books, cabinets, pins, corks, etc.

The library has been largely augmented during the year, and is now the nucleus of a very fair collection of entomological books.

The property of the Society is insured for $850.

Arrangements have been made for the continuation of our Annual Reports, to be published as hitherto under the direction of the Department of Agriculture. If successful in obtaining the increased grant that we are now applying for, it is contemplated to issue with the Reports a coloured plate of insects, believing that by this means we shall be able to present to the public a much more definite and correct idea of the various insects treated of.

All of which is respectfully submitted.

EDMUND BAYNES REED,
On behalf of the Council

FINANCIAL STATEMENT OF SECRETARY-TREASURER.

Receipts.

By Balance in Bank of Montreal		$ 233 73
" Members' Fees, including arrears		250 64
" Government grant for 1872		500 00
" Engraving, from Department for Annual Report, 1871		150 00
" CANADIAN ENTOMOLOGIST, sale of		40 98
" Pins, sale of		15 20
" Cork, "		13 87
" Library acct—Sale of Duplicate Pamphlets	4 75	
" " Donation from Fruit Growers' Association	50 00	54 75
" Expense acct, Exchange, &c		22 53
" Individual accts		18 06
		$1299 76

Disbursements.

To Expense acct., including Editor's salary for 1871	$267 01	
" Engraving for Annual Report	152 55	
" CANADIAN ENTOMOLOGIST, printing Nos. 7—12, vol. iii., and Nos. 1—8, vol. iv	428 16	
" Library acct	181 24	
" Individual accts	15 61	
" Balance in Bank of Montreal*	255 19	
	$1299 76	$1299 76

* *This will be exhausted in meeting liabilities due up to December* 31, 1872.

We certify that the above is a correct statement of accounts for the year ending Sept 19, 1872, as shown by the Treasurer's books, with vouchers for all disbursements.

CHAS. CHAPMAN, }
J. H. GRIFFITHS, } *Auditors.*

LONDON, Ont., Sept. 22, 1872.

ANNUAL ADDRESS OF THE PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO, 1872.

To the Members of the Entomological Society of Ontario:

GENTLEMEN,—It is my happy privilege once again to congratulate you upon the completion of another year of progress in the annals of our Society. As you have already learnt from the very satisfactory Report of our excellent Secretary-Treasurer, the list of members of the Society has been largely added to during the past twelve months; the Library has been increased by the purchase of a number of valuable Entomological works: a cabinet and microscope have been bequeathed to us by our late lamented member, the Rev. Professor Hubbert, and our collections have been much improved; a comfortable and com-

modious suite of rooms has been procured in a central locality in London, Ont.—the present headquarters of the Society; the CANADIAN ENTOMOLOGIST has been regularly issued with, we trust, no diminution in the value and interesting character of its contents; our Second Annual Report on Noxious and Beneficial Insects, prepared by Messrs. Saunders and Reed, and myself, and containing notices of the insects affecting the Apple, Grape, Plum, Currant and Gooseberry, Wheat crops, Potato, Cabbage, Cucumber, Melon, Pumpkin and Squash, has been duly published by the Legislature of Ontario, and no doubt has long since been in the hands of you all. Such, gentlemen, is our record for the year that is now brought to a close, and, having in addition, a satisfactory balance-sheet from the Treasurer, we feel that mutual congratulations are not out of place, and that we who have been honoured with official positions in the Society, can look back upon our efforts in its behalf with at least the agreeable feeling that they have not been altogether in vain.

If we turn, moreover, from our own especial interests to the condition and prospects of American Entomology in general, we find much to afford us satisfaction and encouragement. No large work, indeed, on any particular order of insects has appeared during the past year, but many valuable reports of State Entomologists and portions of serial publications have been issued from the press,—among the latter, I may be pardoned, I am sure, for especially drawing attention to the exquisite illustrations of North American Butterflies contained in Mr. W. H. Edwards' invaluable work, which has now reached its Tenth Part. It speaks well, too, for the growing popularity of this branch of Natural Science, that Dr. Packard's useful "Guide to the Study of Insects" has already reached a *third* edition. A pleasing recognition of American Entomological work has recently, I may add, been manifested in England by the publication there, in a collected form, of the writings of the late Dr. Brackenridge Clemens, on the *Tineina* of North America, under the editorial supervision of Mr. H. T. Stainton, the well-known authority in that department of Lepidopterology.

Apart, however, from the position attained by the growth of our Entomological literature, the Science has this year received a recognition that cannot fail to be of great and permanent benefit to it. I allude to the formation of a special sub-section of Entomology at the recent meeting of the American Association for the advancement of Science. It will now be practicable for American Entomologists—to whatever part of the continent they may belong, whether to a Province of the Dominion or a State of the Union, from the Atlantic to the Pacific—to meet together for mutual conference on matters Entomological. Questions affecting the Science in general can hardly fail to arise from time to time, and demand the consideration, and, possibly, the decision of some such united council. Certainly, the proceedings of such a gathering will be of great interest and value to all who take part in them, if not, indeed, to the whole circle of Canadian and American Entomologists.

At the informal meeting at Dubuque, in August last, one subject was specially brought forward for discussion, which I cannot forbear alluding to more particularly here, especially as it may justly be considered the great question of the day in the Entomological world. I refer to the subject of the Specific and Generic Nomenclature of Insects. For some few years past indications have not been wanting of a growing inclination amongst the mass of Entomologists to resist the efforts made by some few able and distinguished writers to impose, year after year, new sets of names upon our common insects. This has been done partly by the revival of the long-forgotten names published at the close of the last century, or the beginning of the present one: and partly by the perpetual formation of new genera, and the re-distribution of species. The ability of the writers and the good work they have done in other respects, have caused these annoying changes to be acquiesced in for the most part, even though the object in view appeared to be rather the exhibition of their powers of research among antiquated tomes, or the supposed immortalization of themselves by the attachment of their own names to those of our familiar insects. I do not say that these men were actuated entirely by such motives, but assuredly one can hardly be accused of ill-natured criticism in ascribing much of the work to such causes. All must admit, I think, that nomenclature is but a means to an end, and that end is surely best attained by the preservation of all names that have been in universal acceptation for a period of years, and that cannot be set aside without disturbing the cabinets of every Entomologist in the land.

Matters in this respect have been brought to a climax by the recent publication of Mr. Scudder's "Systematic Revision of some of the North American Butterflies." I esteem Mr. Scudder so highly as a friend, and value so greatly the good scientific work that he has done,

that it pains me exceedingly to say a single word against anything that he may put forth. His projected "revision," however, is so sweeping and so revolutionary that I cannot forbear to make some remarks upon it. I know that his scientific labours are perfectly unselfish, and that he is entirely destitute of any of the conceit that I have just now referred to; I feel sure, too, that he is actuated only by the desire to benefit the science: yet I do deeply deplore the mode that he has adopted, and am convinced that if his views are pressed, a very great obstacle will be thrown in the way of the advancement and popularization of this department of Natural History. We all, I am sure, look forward with eager anticipation to the publication of his great work upon North American Butterflies, and have no doubt that it will be the most complete, the most scientific, and the most conscientious work of the kind in America; but assuredly its value will be very greatly marred and its general acceptance impaired, if he continues to insist upon all these radical changes.

To show you what these changes are, I will briefly state that in the pamphlet already published, and which is intended as a forerunner of the author's great work on the Butterflies, the following alterations are made in the received nomenclature:—The 228 species enumerated are distributed among 96 genera—almost a genus for every two species; of these 96 genera, 42 are entirely new, and 39 others are obsolete names of Hubner and others that have never been generally adopted; there are thus 15 familiar generic names left, but of these several are transferred from their present position to entirely different groups of species; for instance, the name of *Papilio* is removed from the genus of "Swallow-tailed Butterflies" and handed over to the sole use of the insect at present known as *Vanessa antiopa!* Further, among the 96 genera, there are no less than 45 that include but a single species apiece; and among the 228 species there are only 16 left with their present names unchanged! These figures are surely quite enough to show that I have not misapplied the terms "sweeping," "revolutionary," and "radical," as characterizing this work of revision. I would, then, most earnestly entreat Mr. Scudder, for the sake of the science itself, to reconsider his projected changes,—to discard all antiquated names in favour of those that have been for years in general acceptation, and to reduce his list of new genera to as small a number as he conscientiously can. If he does not, if he persists in his revision, I fear that his great work—most valuable as it will undoubtedly be in all other respects—will introduce more confusion, trouble and discord into American Entomology than a generation can get rid of. If these difficulties can be avoided in no other mode, it will remain for us all to unite together and agree to ignore all old forgotten names that may be brought forward, and retain all remaining of familiar species, until a general settlement of the question can be satisfactorily arrived at.

I fear, gentlemen, that I have now completely exhausted your patience; I shall therefore hasten to a close. But before doing so, let me remind you that, since our last annual meeting, our Society has lost by death one of its most valued members, Mr. B. Billings, of Ottawa, Ont. He was one of those devoted lovers of science who do good service by their honest, hearty work, but who, from their innate modesty and retiring disposition, shrink from all publicity. At times he contributed valuable papers to our little periodical, but he could never be induced to make any display of the knowledge he had acquired by his patient diligence both at home and in the field.

Permit me now, gentlemen, to resign into your hands the office that you have done me the honour of investing me with. I thank you for your kindness and courtesy towards myself and my colleagues, and with every wish for the continued success and prosperity of your Society.

I have the honour to be, gentlemen,
Your obedient servant,
CHARLES J. S. BETHUNE.

Trinity College School, Port Hope,
September, 1872.

THE LONDON BRANCH.

The following officers were elected for 1872:—

President.....Mr. E. B. Reed,
Vice-President.....Mr. J. M. Denton,
Secretary-Treasurer.....Mr. H. Beck.
Curator.....Mr. Joseph Williams.

The Branch numbers some 50 members

Since the establishment of the head quarters of the Parent Society, weekly meetings are held every Monday evening, at the Society's Rooms, on the corner of Dundas and Clarence Streets; and every effort is made to increase the interest felt in the Society's work.

The Monthly Business Meetings are also kept up, and fairly attended.

The Cabinet belonging to the Branch is being gradually arranged, and the various orders are now well represented both by Canadian and Foreign Specimens.

A resolution was passed at the annual meeting, That a local collection of Insects should be made of specimens obtained within walking distance of the city.

It was also resolved that Books should be received in the Library on Deposit, proper means being taken for their safe keeping.

Prizes were taken by the members of the Branch at the Western Fair held in October, the proceeds of which were devoted by the recipients to the general work of the London Branch.

It is in contemplation to establish a small Museum of Natural History Specimens in connection with the Branch.

Kingston Branch.

The Officers for 1872 were:—

President.....Prof. N. F. Dupuis, | *Secretary-Treasurer*.....Mr. R. V. Rogers, Jun.
Vice-President.....Mr. E. H. Collins, |

It numbers about 20 members.

Meetings have been regularly held during the year.

Additions to the Library.

Drury's Exotic Entomology, 4to.	3	Volumes.
British Beetles: by Janson. 1863	1	"
Farm Insects: by J. Curtis	1	"
British Moths: by E. Newman	1	"
Agassiz's Lake Superior. 1850	1	"
Transactions of American Entomological Society, vols. 1-2	1	"
Illustrations of British Entomology: by J. Stephens	12	"
Histoire Generale des Lepidoteres de l'Amerique Septentrionale: par Le Dr. Boisduval et M. Le Conte. Paris, 1833	1	"
Newman's History of Insects: 1841	1	"
Fitch's Reports on Noxious Insects in State of New York: 1-2	1	"
Packard's Guide to the Study of Insects	1	"
Entomological Correspondence: Harris	1	"
The American Naturalist: 1-5	5	"
The Canadian Journal, vol 3, O. S.; vols. 1-6, N. S.	7	"
Systema Naturæ: Linnæus. 1756	1	"
The Canadian Naturalist: Gosse	1	"
Life of North American Insects: Jæger	1	"
Stainton's Manual of British Butterflies and Moths	2	"
Hind's Essay on Wheat Insects	1	"
Stephen's Manual of British Beetles: 1839	1	"
The Entomologist's Weekly Intelligencer	9	"
Insects At Home: by Rev. J. C. Wood. 1872	1	"
Reports of Commissioner of Agriculture and Arts, Ontario. 1870-1	1	"
Worcester's English Dictionary, Library edition	1	"
Geological Survey of Canada, 1853-56	1	"

Geology of Canada. 1866.	1	Volume.
" " Atlas. 1863	1	"
Geological Survey of Indiana. 1869	1	"
" " Maps	1	"
Transactions of Indiana State Horticultural Society. 1870	1	"

Books Lent on Deposit.

By Joseph Williams—

The Canadian Naturalist and Geologist: O. S., 1-5	5	"
" " " N. S., 1-8	8	"
Binney's Mollusks. vols. 1-4	2	"

By E. B. Reed—

Noel Humphrey's British Butterflies	1	"
Elements of Entomology: by Dallas.	1	"
Origin of Species: by C. Darwin	1	"
A Naturalist's Voyage Round the World: by do.	1	"
Animals and Plants under Domestication: by do.	1	"
Siebald on True Parthenogenesis	1	"
Variation of Species: by V. Wollaston	1	"
The Naturalists' Note Book 1868	1	"
The Naturalists' Library: (Jardine). Insects.	4	"
The Entomologist's Annual, 1856, 1860-1	3	"
Coleman's British Butterflies	1	"
The Insect Hunters: by Newman	1	"

REPORT

ON SOME OF THE

NOXIOUS, BENEFICIAL, AND COMMON INSECTS

OF THE

PROVINCE OF ONTARIO.

INTRODUCTORY.

It has been a source of no small gratification to the writers of these Reports to receive so many kind expressions of appreciation of their labours. The favourable notices too, that have appeared in many English and American publications, afford them much encouragement in the pursuit of their Entomological labours, to which they regret they are unable to devote more than a small proportion of their time: each of them being necessarily engaged in other deeply engrossing pursuits, and having but little leisure at his command. The writers would again remind their readers that they are responsible only for their individual portions of the Report.

E. B. Reed.

London, Ont., November, 18[illegible].

INSECTS INJURIOUS TO THE GRAPE.

ADDENDA TO REPORTS FOR 1870-71.

BY W. SAUNDERS, LONDON, ONTARIO.

No. 17. The Rose beetle, *Macrodactylus subspinosus*, Fab.
18. The Achemon Sphinx, *Philampelus achemon*, Drury.
19. The Abbot Sphinx, *Thyreus Abbotii*, Swainson.
The Grape Seed Insect, *Isosoma vitis* Saunders.
20. A Cut-worm, *Agrotis—?*

In addition to the insects already referred to as injurious to the grape in Ontario in the Entomological Reports for 1870 and 1871, we have the following to submit to our readers.

No. 17. THE ROSE BEETLE (*Macrodactylus Subspinosus*, Fab).

This insect commonly known as the Rose-bug, which for some years past has been reported as doing damage to grape vines in the United States, has always been present with us: but it has not, heretofore, as far as we know, been much complained of by grape growers in any part of Ontario. In the latter part of May, 1872, we received a note from Mr. John Ferguson, of Union, near Port Stanley, Ont., accompanied by a box of these insects, asking for information as to what he should do to get rid of them as they were destroying his grape vines. In a subsequent note he says, "they eat the leaves especially of the Clinton. I found a few on my Concords, but the number was small in comparison to those found on the Clinton; they seem to prefer it, and if left alone, they soon eat all the outer tissue of the leaf, and leave nothing but the net-work."

The fact of this insect showing a preference for the Clinton vine has been remarked before by the late Mr. Benj. D. Walsh, State Entomologist of Illinois, who suggested the taking advantage of this preference on the part of the insect, as a means of lessening the labour attending their destruction. In his first annual report on the "Noxious Insects of Illinois", page 24, he says "In particular seasons, as is well known, and in particular localities this insect occurs in prodigious swarms, and gathers upon grape vines so as to strip them almost entirely of their leaves. The only known remedy that is practically available, is to jar them off the vines and kill them; and of course if we can induce them to concentrate their forces upon one particular vine, and leave the rest alone, the labour of destroying them will be very greatly diminished."

Luckily for the grape grower this can be done. There is concurrent evidence from a great number of different sources, that the Rose-bug prefers the Clinton to all other cultivated varieties, and will gather upon that and leave the others unmolested.

In the *Canada Farmer* for 1867, page 327, the Rose Beetle is referred to as occasionally injurious to the vine, as well as many other shrubs and trees, and mention is made of its great abundance every year in one locality at Oakville; it is also spoken of in Harris' "Insects Injurious to Vegetation" as hurtful to the vine.

Fig. 1.

In Figure 1, we have a representation of the perfect Beetle. It is called the Rose-bug on account of its appearing annually at the time of the blossoming of the rose, and of its having been first noticed as injurious to that flower. The body of this beetle measures a little more than one-third of an inch in length; it is slender in form and tapers a little towards each extremity. Its colour is dull yellowish when fresh, arising from its being covered with a greyish yellow down or bloom: and its long sprawling legs are of a dull pale reddish hue, with the joints of the feet tipped with black. the feet are also armed with very long claws. The down on its body is easily rubbed off, and when this is done there is quite a change in the appearance of the insect, the head, thorax, and the under side of the body becoming of a shining black. The following excellent account of its history is given by Dr. Harris.

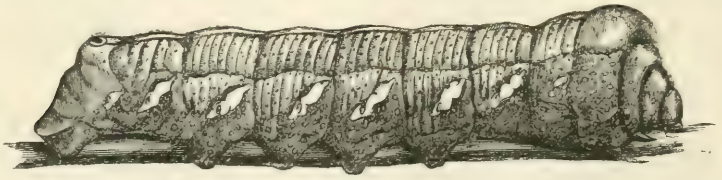
"The unexpected arrival of these insects in swarms, at their first coming, and their sudden disappearance at the close of their career, are remarkable facts in their history. They come forth from the ground during the second week in June, or about the time of the blossoming of the damask rose, and remain from thirty to forty days. At the end of this period the males become exhausted, fall to the ground and perish, while the females enter the earth, lay their eggs, return to the surface, and after lingering a few days die also."

"The eggs laid by each female are about thirty in number, and are deposited from one to four inches beneath the surface of the soil; they are nearly globular, whitish, and about one-thirtieth of an inch in diameter, and are hatched twenty days after they are laid. The young larvæ begin to feed on such tender roots as are within their reach; and when not eating they lie upon the side, with the body curved so that the head and tail are nearly in contact; they move with difficulty on a level surface, and are continually falling over on one side or the other. They attain their full size in the autumn, being then nearly three-quarters of an inch long, and about an eighth of an inch in diameter. They are of a yellowish white colour, with a tinge of blue towards the hinder extremity, which is thick and obtuse, and rounded; a few short hairs are scattered on the surface of the body; there are six short legs, namely, a pair to each of the first three rings behind the head, and the latter is covered with a horny shell of a pale rust colour. In October they descend below the reach of frost, and pass the winter in a torpid state In the spring they approach towards the surface and each one forms for itself a little cell of an oval shape by turning round a great many times, so as to compress the earth and render the inside of the cavity hard and smooth. Within this cell the grub is transformed to a pupa during the month of May by casting of its skin, which is pushed forward in folds from the head to the tail. The pupa has somewhat the form of the perfect beetle; but it is of a yellowish white colour, and its short stump-like wings, its antennæ and its legs are folded upon the breast: and its whole body is enclosed in a thin film that wraps each part separately. During the month of June this filmy skin is rent, the included beetle withdraws its body and its limbs, bursts open its earthen cell, and digs its way to the surface of the ground. Thus the various changes, from the egg to the full development of the perfect beetle, are completed within the space of one year."

Although these insects have many natural foes, such as carnivorous ground beetles, dragon flies, toads, insectivorous birds, domestic fowls, &c., yet they often need the intervening hand of man to keep them within due bounds. The best means of disposing of them is to jar them from the vines on which they are resting with a sudden and violent jar, to sheets spread below to receive them. They are naturally sluggish, and do not fly readily, and are fond of congregating in masses on the foliage they are consuming; and hence, in the morning, before the day becomes warm, they can be easily shaken from their resting places, and disposed of, either by burning them, or by throwing them into scalding water.

No. 18. THE ACHEMON SPHINX. (*Philampelus Achemon*, Drury.)

Fig. 2.

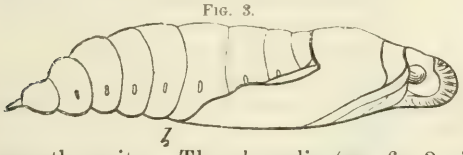


a

The caterpillar of this species (see figure 2) is a formidable looking creature, measuring, when full grown, if at rest, about three inches, and, when crawling, about three and a half inches. While young, as this larva feeds singly, it does not attract much attention, but, as it approaches maturity, it consumes, in a short time, large quantities of leaves, rendering long branches of the vine quite leafless. It is usually met with of full size late in August and feeds on the American ivy (*Ampelopsisquinque folia*) as well as on the grape vine. The following descriptions of the larva and perfect insect are compiled chiefly from Mr. Riley's second report on the insects of Missouri.

The largest segment in the body of the larva is the third behind the head; the second is but half its size, and the first still smaller; and, when at rest, it usually withdraws the head and the two next segments within the third, as shown in the figure. This caterpillar varies much in colour; when young, it is usually green, with a long slender reddish horn, rising from the last segment but one, and curving backwards. When full grown, the general colour is sometimes green, but more frequently a pale straw, or reddish brown, and the long recurved horn has disappeared, its place being occupied by a polished tubercle. The pale straw colour, or reddish brown deepens at the sides, and finally merges into a rich brown. A broken line of brown runs along the back, and another unbroken, with its upper edge fading gradually, extends along each side. It has six scalloped cream coloured spots on each side, and is covered more or less with minute spots, which are dark on the back, but light and annulated at the sides. There are also from six to eight transverse wrinkles on all but the thoracic and caudal segments. The head, front segments and breathing holes incline to flesh colour, while the prolegs and caudal plate are deep brown.

Fig. 3.



When full grown, and about to transform to a chrysalis, the colour of the worm often changes to that of a beautiful pink or crimson. It then descends to the ground, and burrows underneath, and undergoes its change there within a smooth cavity. The chrysalis (see fig 3) is of a dark shining mahogany brown colour, roughened, especially on the anterior edge of the segments in the back.

Fig. 4.

The moth (figure 4) is of a brownish grey colour, variegated with light brown, and with the dark spots shown in the figure deep brown. The hind wings are pink, with a dark shade across the middle, still darker spots below this shade, and a broad grey border behind. It is usually single brooded, the chrysalis remaining in the ground through the fall, winter and spring months, and producing the moth towards the latter part of June.

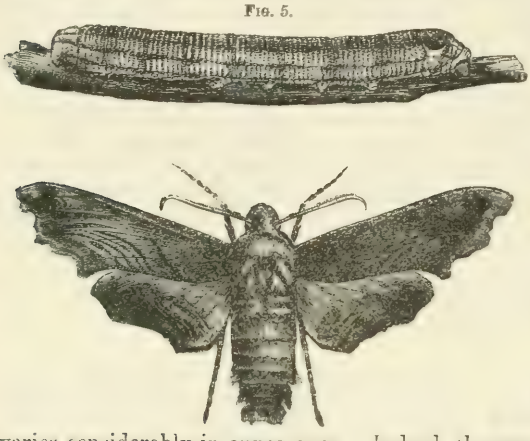
This insect has rarely presented itself in sufficient numbers to prove alarming to the vine grower, either here or in the United States. Indeed, with us, it has hitherto been a rare insect; nevertheless, since some usually rare insects occasionally appear in comparative abundance, we have thought it best to present our readers with a history of the species, so

that all may be able to recognize it. Should it at any time prove troublesome, its large size makes it so conspicuous, that it might be easily controlled by hand picking.

No. 19. THE ABBOT SPHINX. (*Thyreus Abbotii*, Swainson.)

We have never yet met with the larva of this insect, but have seen specimens of the moth, which were captured in the neighbourhood of Hamilton, Ont. Doubtless, some of our readers will have met with it. Figure 5 shews both larva and moth. The following description of this species occurs in Mr. Riley's second report, already alluded to, which we shall take the liberty of copying:—

Fig. 5.



"This is another of the large grape feeding insects occurring on the cultivated and indigenous vines, and on the Virginia Creeper, and having, in a full grown larva state, a polished tubercle, instead of a horn at the tail. Its habitat is given by Dr. Clemens as New York, Pennsylvania, Georgia, Massachusetts, and Ohio; but, though not so common as the Sphinx moths previously described, yet it is often met with both in Illinois and Missouri. The larva, which is represented in the upper part of figure 5, varies considerably in appearance. Indeed, the ground colour seems to depend in a measure on the sex, for Dr. Morris describes this larva as reddish brown, with numerous patches of light green, and expressly states that the *female* is of a uniform reddish-brown, with an interrupted dark brown dorsal line, and transverse striæ. I have reared two individuals, which came to their growth about the last of July, at which time they were both without a vestige of green. The ground colour was dirty yellowish, especially at the sides. Each segment was marked transversely with six or seven slightly impressed fine black lines, and longitudinally with wider non-impressed dark brown patches, alternating with each other, and giving the worm a checkered appearance. These patches become more dense along the subdorsal region, where they form two irregular dark lines, which, on the thoracic segments, become single, with a similar line between them. There was also a dark stigmatal line, with a lighter shade above it, and a dark stripe running obliquely downwards from the posterior to the anterior portion of each segment. The belly was yellow, with a tinge of pink between the prolegs, and the shiny tubercle at the tail was black, with a yellowish ring around the base. The head, which is characteristically marked, and by which this worm can always be distinguished from its allies—no matter what the ground colour of the body may be—is slightly roughened and dark, with a lighter broad band on each side, and a central mark down the middle, which often takes the form of an x. This worm does not assume the common sphinx attitude of holding up the head, but rests stretched at full length; though, if disturbed, it will throw its head from side to side, thereby producing a crepitating noise."

"The chrysalis is formed in a superficial cell on the ground; its surface is black and roughened by confluent punctures, but, between the joints, it is smooth, and inclines to brown; the head case is broad and rounded, and the tongue case is level with the breast; the tail terminates in a rough flattened wedge-shaped point, which gives out two extremely small thorns from the end."

"The moth appears in the following March or April, there being but one brood each year. It is of a dull chocolate or greyish brown colour, the front wings becoming lighter beyond the middle, and being variegated with dark brown, as in the figure. The hind wings are sulphur-yellow, with a broad dark brown border, breaking into a series of short lines, on a flesh-coloured ground, near the body. The wings are deeply scalloped, especially the front ones, and the body is furnished with lateral tufts. When at rest, the abdomen is curiously curved up in the air."

Should this worm at any time become sufficiently numerous to prove destructive—

which is scarcely probable—we could not suggest a better remedy than that given for the preceding species, namely, hand picking.

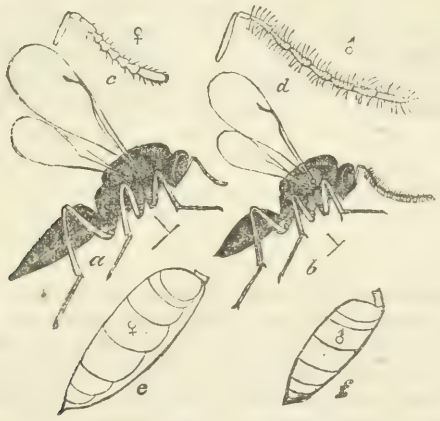
THE GRAPE SEED INSECT. (*Isosoma Vitis*, Saunders.)

This insect, which was fully described in the report of the Entomological Society for 1870, has not, as far as we have been able to ascertain, affected the grape to any extent in Canada during the past year. It seems, however, to be much more widely distributed than we at first supposed. During the latter part of August, we spent a few days at Dubuque, Iowa, and while there paid a visit to the market, where there were offered for sale large quantities of a species of wild grape, which was fully ripe at that early period in the season, and which, we were told, was much used for wine making. On opening the seeds of these grapes we found a large proportion inhabited by the larvæ of this insect, a small, fat white grub. See figure 6, where it is shown much magnified. An outline of the little creature of the natural size is given below. The larvæ at that time were more than two-thirds grown.

Fig. 6.

For the benefit of those who may not have access to the report for 1870, we give a figure also of a perfect fly, almost identical in appearance with that from which this larva is produced, and well serves the purpose of illustrating

Fig. 7.



it. See figure 7. *a* Represents the female; *c* and *e*, her antennæ and abdomen; *b*, *d*, and *f* give similar details of the male. The larva lives within the seed, and consumes the kernel during the summer; undergoes its change to chrysalis also within the seed, and eats its way out of it in the early part of the summer following, when in the perfect or winged state.

No. 20. A CUTWORM. (*Agrotis —?*)

This destructive pest, which is referred to at length in this report, when treating of the insects affecting the strawberry, has also proved very destructive to the vine. For details of the history and habits of this insect, the reader is referred to No. 7, Injurious to the strawberry.

INSECTS INJURIOUS TO THE STRAWBERRY.

By W. Saunders, London, Ont.

1. The Strawberry Root or Crown Borer (*Anarsia lineatella*, Zeller).
2. The White Grub (*Lachnosterna quercina*, Knoch).
3. A Strawberry Leaf-Roller (*Anchylopera fragaria*, Riley).
4. A second Strawberry Leaf-Roller (*Exartema permundana*, Clemens).
5. A third Strawberry Leaf-Roller (*Lozotænia fragariana*, Packard).
6. Other Strawberry Leaf-Rollers.
7. A Cut Worm (*Agrotis*).
8. The Measuring Worm (*Angerona crocaotaria*).
9. The Smeared Dagger (*Acronycta oblinita*, Sm. & Abb.).
10. The Strawberry False Worm (*Emphytus maculatus*, Norton).
11. *Osmia Canadensis*, Cresson.
12. A Strawberry Bug (*Corimelaena* —— ?)

Fortunately, there are not many insects injurious to this useful and now extensively cultivated fruit. It has, however, several special foes, which have in some localities at times proved troublesome, and there are a few other general feeding insects, which take to strawberry, if it lie in their path, as readily as they will to any other green thing they may meet with. Still, in any case, the strawberry grower must not look upon insects as an unmixed evil, admitting of no toleration, for he would find it very difficult indeed to secure a good crop without their aid. In some varieties of strawberries, the flowers are more or less imperfect, the male organs being more fully developed in some, the female organs in others, so that fertilization can rarely take place, excepting through the agency of insects, who visit flower after flower, and carry and scatter the fertilizing pollen with them wherever they go; and even with the perfect flowers their presence and unconscious labour is required to ensure a liberal crop of well formed fruit.

AFFECTING THE ROOT.

The Strawberry Root or Crown Borer (*Anarsia lineatella*, Zeller).

This is a very troublesome insect where it occurs plentifully, and takes a liking to the strawberry; but, happily, this is not often the case. We have never seen it affecting this fruit anywhere excepting on the grounds of Mr. Luke Bishop, of St. Thomas, Ont., who first called our attention to it about the middle of May, 1869, when he brought us a few specimens. During 1868 and 1869, they played sad havoc with his plants, destroying a large proportion of them. We believe they have been less troublesome since. The borer is a small grub or caterpillar, nearly half-an-inch long, and of a reddish colour, which eats irregular channels in various directions, through the crown and larger roots of the plant, causing it either to wither and die, or else to send up weakened and almost barren shoots.

The following description of this larva was taken on the 20th of May, 1869 :— Length, ·42 inch. Head rather small, flattened, bilobed, pale brownish yellow, darker in colour about the mouth, and with a dark brown dot on each side.

The body above is semitransparent, of a reddish pink colour, fading into dull yellow on the second and third segments ; anterior portion of second segment smooth and horny-looking, and similar in colour to head. On each segment are a few shining reddish dots—yellowish on the anterior segments—or faintly elevated tubercles, from each of which arises a single, very fine, short, yellowish hair, invisible without a magnifying power. These dots are arranged in imperfect rows, a single one across the third, fourth, and terminal segments, and a more or less perfect double row on the remaining segments.

The under surface is of a dull whitish colour, becoming faintly reddish on the hinder segments, with a few shining whitish dots ; those on the fifth, sixth, eleventh, and twelfth segments, being arranged in transverse rows, in continuation of those above. Feet and prolegs yellowish white, the former faintly tipped with dark brown. It spins a slight silken thread, by means of which it can suspend itself for a time at a short distance from its place of attachment. The specimen described produced the moth on the 8th of July following.

On the 8th of June, we visited the grounds of Mr. Bishop, and found his strawberry beds badly infested—indeed, almost destroyed—by this pest, along with a leaf-roller, to be presently described. We believe there are two broods of this borer during the year. That which we call the first brood is the one in which the larva passes the winter in a young or half-grown state, in the crowns and roots of the plants ; while the second brood infests the young runners, soon after the fruiting season is over. The borer eats irregular channels through the crown, sometimes excavating large chambers, at other times merely girdling it in various directions, here and there eating its way to the surface. Whether these various chambers and channels are due to the presence of more worms than one in a single root we were unable to determine with certainty. Most of the cavities contained a moderate-sized soft silky case, which, when opened, appeared nearly full of exuviæ. These cases had served as a place of retreat during winter. Most of the larvæ found at this date had eaten their way to the upper part of the crown of the plant, just under the surface, and were found about the centre, with a hole eaten through the surface. From the fact that a large number of roots were examined, and although almost every one was more or less injured, but very few larvæ were to be found, we inferred that the probabilities were that the larvæ, when mature, usually leave the root, and undergo the change to chrysalis, either under the surface of the ground, or amongst rubbish at the surface. One chrysalis only was found, and that was in the cavity of a root. As soon as Mr. Bishop had discovered the destructive character of this pest, he, with commendable caution, refused to sell any more plants until the insect was subdued, for fear of spreading the evil. He is of opinion that the insect came to him from some part of the United States, with some plants of the Hooker strawberry, as it was in a patch of these, so obtained, that he first noticed the insect working.

Specimens of the larvæ got late in the season wintered over, and were examined on the 12th of January following, when they did not appear so plump in body as those examined in July. They appear to spend most of the winter in a torpid state within the silken cases before mentioned. Several were found thus sheltered at this time, and one, whose original abode had been disturbed in the fall, had prepared for itself a similar casing within the fold of a strawberry leaf. In this latter instance, the larva seemed quite active, moving itself briskly about whenever touched.

The chrysalis of this insect is very small, and of the usual dark reddish brown colour. That one which was found on the 8th of June produced the moth on the 12th of July.

The perfect insect is a very small dark grey moth, which was accurately described by the late Dr. Clemens, in the *Proceedings of the Academy of Natural Sciences, Philadelphia*, for 1860, page 69, under the name of *Anarsia pruniella*, as he at that time supposed it to be distinct from the European insect. We quote his description :—" Head and face pale grey ; thorax dark grey. Labial palpi dark fuscous, externally, and pale grey at the end ; terminal joint grey, dusted with dark fuscous. Antennæ grayish, annulated with dark brown. Fore wings grey, dusted with blackish brown, with a few blackish brown spots

along the costa, the largest in the middle, and short blackish brown streaks on the median nervure, subcostal, in the fold, and one or two at the tip of the wing; cilia fuscous-grey. Hind wings fuscous-grey; cilia grey, tinted with yellowish."

"The larva was taken, June 16, full-grown, and about to transform on the limbs of the plum. Its head is black, body uniform reddish brown, with indistinct papula, each giving rise to a hair, and with pale brown patches on the sides of the third and fourth segments; shield and terminal prolegs black. One specimen had secreted itself under a turned-up portion of the old bark of the trunk. The cocoon is exceedingly slight, and the tail of the pupæ is attached to a little button of silk."

Mr. C. V. Riley, who has kindly determined this moth for me, draws attention to the coarse nature of the scales on the wings, appearing something like minute granulations. He also observes that, in some specimens of the moth, the dark marks are more or less obsolete. Mr. Riley has bred this moth from larvæ boring into tender peach twigs, and remarks that "the larva, when young, is paler, with a paler head, the body being yellow, each joint with a crimson band superiorly, narrow on the thoracic joints, and broad, and divided transversely by a fine pale line on the feet." Mr. J. Pettit, of Grimsby, Ont., has bred it from the twigs of the peach, and it breeds in peach twigs, also, in Europe; and Professor Townend Glover, of the Department of Agriculture, Washington, has found it feeding on the buds of the peach.

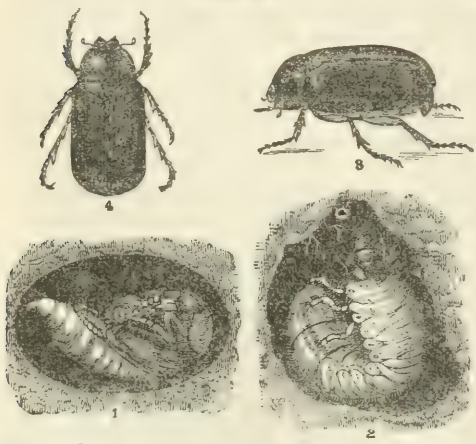
Since this moth is found in Europe as well as in this country, it is in all probability an imported insect, and one that is widely disseminated. We are not aware that it has been recorded as injurious to the strawberry before, and we sincerely hope that this apparently lately developed liking for this food plant will be limited to the specimens residing in the district referred to. Should it ever become general, it would prove a most grievous pest to the strawberry grower.

Remedies.—Happily even this small creature is not without its enemies. Among some larva sent to Mr. Riley, several, he says, contained parasites: probably these tiny friends have been doing much in the past, and are still doing much, to limit their increase. Nature's operations, although often silent, are usually sure. Possibly severe cold or extreme heat may also affect them. Man can do little in this instance, unless he digs up his strawberry roots and burns them.

2. The White Grub (*Lachnosterna quercina*, Knoch).

The White Grub, or larva of the May-beetle—*Lachnosterna quercina*, Knoch—is often loudly complained of. Both in the larval and perfect conditions, it is at times very destructive: now and then the ground in certain localities seems full of the larvæ, they turn up with every spadeful of earth, and the plough will expose them by hundreds.

Fig. 8.



In figure 8, we give representations of the insect in its different stages:—2 illustrates the full-grown grub; 1 the chrysalis, and 3 and 4 the perfect beetle. Everyone must be familiar with the May-beetle, or May-bug, as it is sometimes called—a buzzing beetle with a rapid, but wild and erratic flight, which comes thumping against the windows of lighted rooms at night, in May and early in June; and where the windows are open it dashes in without a moment's consideration, bumping itself against walls and ceilings, occasionally dropping to the floor; then suddenly rising again, it sometimes lands unexpectedly against one's face or neck, or it may be on one's head, where its sharp claws get entangled in the hair, and its further progress is stayed until a forcible removal takes place. At such times it is quite a terror to those whose nerves are weak.

Although thousands of these summer-evening tormentors are yearly, yea, nightly, trodden to death during their brief season, yet thousands of others rise to supply their places, and sometimes they are reinforced by armies of tens of thousands. Then it is that oftimes serious damage is done to trees whose foliage they consume, their powerful and horny jaws being admirably adapted for cutting and grinding the leaves. Cherry trees are frequently injured in this way; indeed, these beetles are not at all particular as to what they eat—the oak, the Lombardy poplar, and many other kinds of trees, are just as readily attacked, if in their way.

The *Canada Farmer* for July, 1866, contains an excellent article on this subject, by our esteemed friend, Rev. C. J. S. Bethune, Port Hope, with details of the habits and history of this insect, which we cannot do better than re-produce:—

"A friend in Cobourg has recently mentioned to us, that his strawberries have been very much injured by a large white grub which attacks the roots, and thus destroys at once the vitality of the plants. From his description of the marauder, we have no doubt that it is the larva of the common May-beetle or Cockchafer—*Luchnosterna Quercina*, Knoch—which is so abundant just now. In the western part of Cobourg, and, indeed, almost all over the neighbourhood, these beetles may be seen on any fine evening, in perfect myriads flying about the trees, the leaves of which they devour in this stage of their existence.

"This insect has been long and most unfavourably known as very destructive to vegetation, both in its larval and winged state. In the former, it is commonly called the 'white grub:' it is then a soft, white worm, with a brownish head, and six legs, becoming, when fully grown, about as large as one's little finger. It is usually found partially coiled up, near the root of the plant on which it is feeding. Unlike many of our destructive insects, the devastations of each individual are not confined to a single year, but it continues several years in the grub state, and, finally, changes early in the spring into a dark chestnut brown beetle, nearly an inch long, with rather long legs, and its breast covered with yellowish hairs. It flies about at night with a loud buzzing noise, and in a most clumsy manner, as if it had very little control over its movements, to the great discomfort and perturbation of nervous persons, especially when attracted into houses, as it often is, by the light. Its period of flight is usually limited to the months of May and June, though it is sometimes met with a little later in the season. The grubs are very commonly dug up, early in the spring, in gardens, in various stages of maturity; the plough, too, brings many more to the light of day. It is hardly necessary, we suppose, to tell our readers that in such cases they should be destroyed at once, and without mercy, by treading under foot. The perfect insects may be collected and put an end to, by shaking them from the trees they infest, into a cloth spread beneath for their reception, and then throwing them into boiling water; the specimens thus cooked will be readily eaten by pigs, which, in fact, root up and devour multitudes of the grubs without waiting for any previous culinary operations. The best time to shake them from the trees is early in the morning, when they become sluggish and stationary, their flight being confined to the hours of darkness."

The larva of this May-bug does not by any means confine its attention to strawberry roots, but devours potatoes, corn and other vegetables, also the roots of grass, and this to such an extent that at times meadows are utterly ruined by them, so that the turf may be turned up like a carpet, so utterly are the roots consumed.

After the pairing of the sexes, the males soon die, while the females burrow into the ground some six inches or more, where they deposit their eggs from fifty to a hundred in number, after which they come out again from the earth, but their mission having now been accomplished, they soon die. The eggs soon hatch into white grubs, which begin at once to feed on the roots of any plants within their reach. During the summer, they burrow about and feed not far from the surface; but as winter approaches, they dive deeper into the soil, below the reach of frost, where they remain torpid until spring. At the close of the third summer, they cease feeding, and bury themselves sometimes two feet deep in the earth, and there, in an oval cavity, formed by the motions of the larva from side to side, the change to chrysalis takes place, the beetle digging its way through and appearing at the surface in due season. Sometimes the transformation to

the beetle state takes place in the fall, for we have several times found fresh specimens at this season, showing by their softness that they had but lately escaped from the pupa case. Such perfect insects secrete themselves under ground during winter, and appear with the rest of their troop in spring.

Remedies. Man can do but little towards checking the ravages of this insect pest, but nature has provided many means for keeping them within due bounds. Some birds, such as the crow and common fowl, eat them greedily, indeed the crow may often be seen following the track of the plough in search of these choice morsels. As already stated pigs eat them with avidity, and will root up the ground most thoroughly in their search for them, and no doubt many other insect eating animals and birds devour them with equal delight. These grubs are also liable in some parts to the attacks of a peculiar disease, which manifests itself in the development of a fungous growth, which sprouts out in a curious manner from about the head, and the result is the death of the insect so occupied. The beetles, as already stated, may be best destroyed by shaking them from the trees and throwing them into scalding water.

Affecting the Leaves.

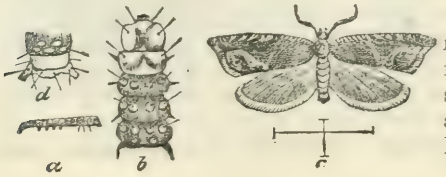
3. A Strawberry-Leaf Roller (*Anchylopera fragaria*, Riley.)

This insect, which is also known in some parts of the United States as *the* strawberry leaf-roller, is but one of the several insects which affect the strawberry in this way. It has been found very troublesome in some of the adjoining States for several years past, and in all probability it occurs in Canada also. In the *Canada Farmer* for August, 1867, some account is given of a leaf-roller found by Mr. Chas. Arnold, of Paris, Ont., eating the leaves of his strawberry plants, which has been referred, and probably correctly so to this species. Possibly some of our readers may recognise the insect after reading the following description of its appearance and mode of working, condensed chiefly from a paper by Mr. C. V. Riley, State Entomologist of Missouri, and published in the *American Entomologist* for January, 1869 :

The larva or caterpillar measures when full grown a little more than one third of an inch. It is largest on the front segments, tapering slightly towards the hinder ones. In colour it varies from a very light yellowish brown to a dark olive green or brown, with a body soft and somewhat semi-transparent. Its head is of a shining yellowish brown colour, with a dark eye-spot on each side. The second segment has a shield above similar in colour and appearance to the head, and on each segment or ring of the body are a few pale spots, from each one of which arises a single hair. The hinder segment has two black spots, while the under-surface, feet and prolegs are about the same colour as the body above. In certain parts of North Illinois and Indiana this insect has been ruining the strawberry beds in a most wholesale manner. It crumples and folds the leaves, feeding on their pulpy substance, and causing them to appear dry and seared. It most usually lines the inside of the fold with silk. There are two broods during the year, and the worms of the first brood, which appear during the month of June, change to the pupa state within the rolled up leaf, and become moths during the fore part of July.

The moth has the head, thorax, and fore wings reddish brown, the latter streaked and spotted with black and white ; the hind wings and abdomen are dusky. The wings when spread measure nearly half an inch across. After pairing the females deposit their eggs on the plants, from which eggs in due time there hatches a second brood of worms, which come to their growth towards the end of September, and changing to pupæ pass the winter in that state.

Fig. 9.



In the accompanying figure 9, drawn from nature by Mr. Riley, *a* represents the larva natural size, *b* the head and four succeeding segments of the body, and *d* the terminal segment, all magnified; *c* the moth, also enlarged, the hair lines at the sides showing the natural size.

4. A Second Strawberry Leaf-Roller (*Exartema* (*Tortrix*) *permundana*, Clemens.)

This species was found in immense numbers attacking Mr. Bishop's strawberry vines in 1868 and 9, along with the "crown borers" already described. All these leaf rollers have the habit of rolling up the leaves and fastening them with silken threads, and living within the enclosure, but this little creature prefers taking the flowers, expanded and unexpanded, and bringing them together with silken threads into a sort of ball, it feasts on their substance. This peculiarity makes its attacks much more annoying and destructive than any mere consumption of leaves would be. It is small in size, of a green colour, and with very active habits, wriggling itself quickly out of its hiding place when disturbed. It is the progeny of a small moth, with its fore wings yellowish varied with brown streaks and patches, and darker hind wings, who lays her eggs quite early in the spring, placing them upon the developing leaves, where the newly hatched larvæ may be sure to enjoy an abundance of tender and juicy food, and these attain to nearly their full growth, and are just then capable of most mischief, at the time when the plant is coming into full flower. During 1869, Mr. Bishop must have lost nearly half his crop of strawberries from this cause alone. We have found this species attacking the wild strawberry in different localities, and have little doubt but that it is widely disseminated; but why it should so persistently attack the plants in one locality, and multiply so amazingly there, while comparatively unknown in other places, we are unable to do more than guess at: possibly they may have been kept under in other localities by parasites which feed on them. The larvæ of most moths are liable to attack from one or more of such enemies, and we know that this species is not exempt, for several of the larvæ which we succeeded in bringing into the chrysalis state, instead of producing moths, yielded specimens of these small parasitic flies instead.

We are indebted to Mr. C. V. Riley for determining this species for us. It was described by Dr. Clemens in the Proceedings of the Academy of Natural Sciences, Philadelphia, for August, 1860, where the author states that "the larvæ bind together the terminal leaves of Spiræa." Hence it would appear that this insect does not confine itself to the strawberry as a food plant, and may possibly be quite a general feeder.

The chrysalides of this species were of the usual dark brown colour, from which the moths made their escape from the eighth to the twelfth of July.

5. A Third Strawberry-Leaf Roller (*Lozotœnia fragariana* Packard.)

This insect has been reared by Dr. A. S. Packard, of Salem, Mass., from the wild strawberry, and is described in his "Guide to the Study of Insects." The larva was found in Maine early in June, in folds of the leaves; the moth appearing about the middle of the same month. The moth is very pretty, and measures, when its wings are expanded, eight-tenths of an inch. Its fore wings are red, darker on the outer half, and with a large triangular white spot near the middle of the front edge; the outer edge of the spot is hollowed out. The outer edge of the wing is pale especially in the middle, and about the same colour as the head and thorax; the hind wings and abdomen are of a whitish buff, underneath they are whitish. It is quite likely that this species occurs also in Canada, although it has not yet been observed.

6. Other Strawberry Leaf-Rollers.

Fig. 10.

Several other species have been observed by us affecting the strawberry, all of them green, with pale or dark brown heads, and more or less semi-transparent bodies, sometimes tinged in parts with yellowish. One of these, the oblique banded leaf-roller, *Lozontœnia rosaceana*, Harris' is a very general feeder, and has been already referred to in the reports of the Entomological Society of Ontario for 1870 and 1871, and to these the reader is referred for its full history. We shall, however, reproduce the figures relating to this insect, as they will serve somewhat to illustrate all the leaf-rollers spoken of, since

Fig. 11.

they have more or less of a family resemblance in all their different stages. Fig. 10 shows the caterpillar and chrysalis, and Fig. 11 the perfect moth, with its wings expanded as well as folded.

The life history of the other leaf-rollers referred to above has not yet been fully worked out, and as they have not thus far attracted much attention, we pass them over with this brief notice.

Remedies. Since all these leaf-rollers feed on the foliage and come out of their hiding places for this purpose, an application of hellebore and water on the leaves would probably destroy many of them. It has also been recommended to plough deeply either in the Autumn or Spring, such beds as may be badly infested, with the view of burying the chrysalides sufficiently deep to ensure their destruction. Hand-picking may also be practised with advantage, as the curled leaves are easily seen.

A Cut-worm (*Agrotis*).

This is an insect which has been most unusually injurious during the past season on the fruit plantations of Mr. Mountjoy and Mr. Bunning, on the borders of Lake Huron, near Sarnia. At first its habits were not understood, and it pursued the "even tenour of its way" uninterrupted night after night; the perplexed fruit growers not knowing why it was that every day the foliage on their fruit trees and strawberry patches grew slimmer. But soon it was found that the enemy was a night worker, and this knowledge of its habits was at once turned to account, and night watches instituted with the view of counteracting this insidious foe, and with good results, as many as 1800 having been killed by Mr. Mountjoy in one night.

Their manner of life may be thus described. The moths from which the worms are produced appear on the wing during the month of August, and soon after pair, and deposit their eggs on the ground or on some plant or other substance near the ground; they probably hatch in the fall, and feed for a time on the leaves of grass and other plants then abundant, and after attaining but a small measure of their growth, they burrow into the earth, and there remain in a torpid state during the winter; but the warmth of spring revives them and soon they are abroad and active. During the first few weeks while they are still small, the quantity of food they consume is not sufficient to attract much attention; but as they approach nearer maturity, that is about the time when the trees first put out their tender foliage, the quantity of food they consume is enormous. In the day time they rest tolerably secure from harm, by burrowing a short distance underground, and towards night they sally forth from their hiding places to begin their work of destruction. They are extremely active in their movements, and travel over quite a space of ground in a very short time, eating almost everything green in their way; they climb the trunks of trees, and consume not only the young foliage, but the buds also, leaving the limbs almost bare, and before the light of another day dawns they retreat to their hiding places and rest in quiet. When full grown they burrow deeper into the earth, and form for themselves an oval cell or chamber, in which they change to chrysalis, and from which the moths are produced early in the autumn to continue the race.

In this instance these caterpillars took a decided liking for the strawberry vines, and in spite of the most vigilant search for them day after day and night after night, they defoliated a large patch of the vines to such an extent that they were utterly ruined. Nearly all through the month of June they literally swarmed and scarcely a night passed without considerable damage being done by them. It was late in the month when we received a package of the larvæ from Mr. Mountjoy, and from which the following description was taken on the second of July:—

Length one and a half inches, cylindrical, coiling the body up when disturbed, and discharging a green liquid freely from the mouth when handled.

Head small, rather flat, scarcely bilobed, of a dull brownish yellow colour, with a triangular looking furrow in front, the base of the triangle being towards the mouth; between the lobes the colour is of a slightly darker shade. On the upper part of each

lobe is a blackish dot, and two or three more on each side near the base of the palpi ; mandibles or jaws tipped with dark brown.

The body above is greenish grey and semi transparent ; on the second segment or ring there is a horny plate above, similar in colour to the head, slightly bordered behind with dark brown. There is a dark greenish line down the middle of the back with a whitish centre, the green colour becoming fainter and almost disappearing on the anterior portion of the body. Along the sides, about half way down is a dull whitish line, and another of the same colour just above the stigmata or breathing holes, while close to the under surface the body is bordered with an irregular band of the same hue. On each side of the dorsal or central line above, is a small dark brown dot, on each ring or segment of the body. Stigmata nearly round and of a deep black colour.

The under surface is more transparent than the upper, especially on the anterior and terminal segments ; the colour is dull yellowish with a greenish tinge, from the internal organs showing through. The feet and legs are yellowish and semi-transparent.

In colour these caterpillars vary somewhat, some are of a deeper shade, becoming greenish brown, with the whitish lines fainter ; in these the green in the band down the back, can be seen alternately contracting and expanding when the larva is at rest, the greater transparency of the skin showing the working of the internal organs through it. Many of them died in confinement, and only six or seven completed their various stages, going into chrysalis early in July, and producing the moths late in August.

The chrysalis is about $\frac{6}{10}$ths of an inch in length, and of a pale brown colour, and is contained in a little oval chamber or cell of earth a few inches below the surface.

The moth, when its wings are expanded measures about an inch and a half across. The fore wings are pale brownish, streaked and spotted with grey ; the hind wings are of a uniform pale brownish grey, with a white fringe around the margin. There is a whitish grey band across the front just behind the head, the anterior portion of the body is dark brownish grey, and the abdomen the same colour as the hind wings.

Experience seems to indicate that these insects are much more numerous in light sandy soils, than they are where the soil is heavier.

Remedies.—This is a very difficult insect to cope with. In all probability the moths which are attracted by light might be trapped, or poisoned by hanging about pieces of cloth or flannel daubed with a mixture of molasses and a strong solution of arsenic, but as they fly late in the season, when the sense of pressing danger is past, it would be difficult perhaps, to induce people generally to take much pains with them then. Hence the battle must be fought with this insect while in the larva or caterpillar state, and then the surest way of disposing of them is to catch and kill them. By searching around the vines just under the surface of the ground during the day, many may be turned up and destroyed, and by inspecting again at night when they are active and busy their ranks may be still further thinned, and by continuing this treatment, day after day, they may no doubt be kept under. Probably dusting the vines with hellebore would poison them as it does other leaf-feeding insects ; this measure is at least worthy of a trial.

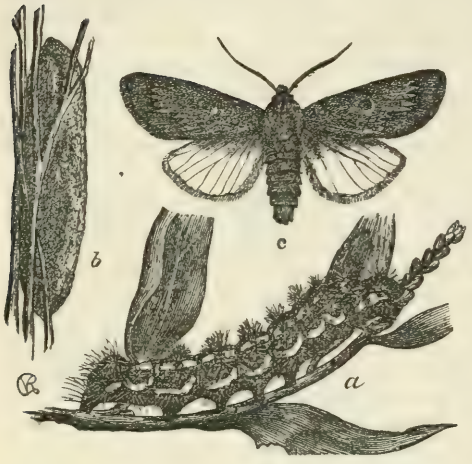
8. The Measuring Worm (*Angerona crocaotaria*, Guenee).

Fig. 12.

This larva, which was described in last year's report as injurious to the currant and gooseberry, has also been found attacking the strawberry. The caterpillar is yellowish-green, with longitudinal whitish lines, and is about an inch and a half long. The moth, see Fig. 12, varies in colour from a pale to a deep yellow, with dusky spots and dots, in some specimens few, in others quite numerous, and in the latter case the larger ones are so arranged as to form an imperfect band across the wings. For further details respecting the life-history of this insect, the reader is referred to the report of the Entomological Society for 1872, page 37.

9. The Smeared Dagger (*Acronycta oblinita*, Sm. and Abb.).

Fig. 13.



The accompanying figure illustrates this insect in its various stages. The larva is a brightly ornamented, hairy caterpillar, about one and a quarter inches long. Its head is flat in front, rather below medium size, with a few yellow hairs; its jaws are black.

The body above is of a deep velvety black, with a transverse row of prominences or tubercles on each segment, those above are bright red, and set in a band of the same colour, extending far down on each side. From each tubercle there arises a tuft of short stiff hairs, those on the upper part of the body being of a red colour, while below they become yellowish or mixed with yellow. On each side of a line drawn down the centre of the back, is a row of bright yellow spots, two or more on each segment, and below these and close to the under surface, is a bright yellow band deeply indented on each segment, the indentations being on a line with the rows of tubercles. The spiracles or breathing holes are pure white, and are placed in the indented portions of the yellow band; there are also a few whitish dots scattered irregularly over the surface of the body.

The under side is dull reddish along the middle, and brownish black along the sides; the feet are of a shining black, and slightly hairy, while the thick fleshy hinder legs, called the prolegs, are reddish tipped with brown, with a cluster of short hairs on the outside of each.

This caterpillar is conspicuous from its beauty, and at first one can scarcely believe that such a handsome caterpillar could produce so plain and quiet looking a moth. Since this larva does not usually feed in company, but is scattered about singly, and as it is such a general feeder, there is no probability of its ever becoming very injurious, but its brilliant appearance is sure to attract the attention of every beholder. We have found it feeding very commonly on strawberry, also on raspberry, and occasionally on the Lombardy poplar. Mr. Riley has found it very common on smartweed, and a correspondent of his in Jefferson City, Mo., has found them very numerous on his peach trees, and has known them to denude both apple and willow trees.

As soon as this larva is full grown it draws together a few leaves or other loose material and constructs a rude case, within which it changes to a dark brown chrysalis. In this enclosure it remains a considerable time; those that we have bred have changed to chrysalis early in September, and did not produce the moths till June following. Mr. Riley says that in Missouri there are two broods each year, and it is possible they may be double-brooded with us also, in which case the summer brood must pass through the various stages of its existence in a much shorter time.

The moth, Fig. 13, *c*, is shown of the natural size. Its fore wings are grey, with a row of blackish dots along the hind border. There is a broken, blackish, zigzag line —sometimes indistinct— crossing the wing beyond the middle, and s ome darker greyish spots about the middle of the wings. The hind wings are nearly pure white.

In Mr. Riley's third "Report on the Insects of Missouri," he says, "there are at least three natural enemies which serve to keep this insect in check. The largest of these is the Uni-banded Ichneumon fly (*Ichneumon unifasciatorus*, Say) a large black fly, 0·60 inch long, and characterized by a white annulus about the middle of the antennæ, a large white spot about the middle of the thorax, and a white band on the first joint of the abdomen."

"This fly oviposits in the larva of the Smeared Dagger, but the latter never suc-

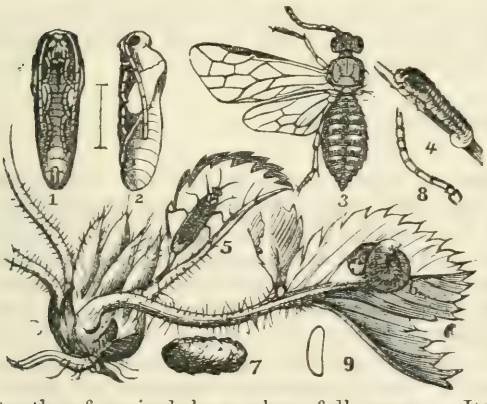
cumbs till after it has spun up and become a chrysalis, for I have always obtained the ichneumon from the chrysalis. The other parasites are smaller and work differently. They cause the larva of the Smeared Dagger to die when about full grown, and its contracted and hardened skin, which may often be seen during winter, with the head attached, fastened to the twigs of apple and willow trees, forms a snug little house, where the parasite undergoes his transformations, and through which it gnaws a round hole to escape the latter part of April. One of these flies (*Aleiodes Rileyi*, Cresson) is of a uniform reddish yellow colour. The other is a black fly of about the same size, but belonging to an entirely different genus, *Polysphincta*."

The only artificial remedy which has been recommended is that of hand-picking.

10. The Stawberry Falseworm, (*Emphytus maculatus*, Norton).

This insect, although it has not yet been observed in Canada, will very probably be with us before long. It has been common in the adjoining Western States for some time past, and as the perfect insect is winged, and during the hotter portion of the day quite active, and since the strawberry now is so widely cultivated, there is nothing to hinder the spread of this destructive insect, the habits of which it will be well for us to fully understand, so that we may know how to treat the enemy on its first appearance. We know that a near relative of this insect, the gooseberry saw-fly (*Nematus ventricosus*) has spread in a short time over a large section of our Province. Since we have had no personal experience with this foe to the strawberry grower, we shall avail ourselves of an excellent description of its life, history and habits, written by Mr. C. V. Riley, of St. Louis, Mo., and published in the first volume of the "American Entomologist," p. 90.

Fig. 14.



The adjoining Figure 14, drawn from nature by Mr. Riley, admirably illustrates this insect in its various stages. 1 shows the under side of the pupa or chrysalis. 2, a side view of the same. 3, an enlarged view of the perfect fly, showing the arrangement of the veins of its wings. 4, the larva or worm crawling. 5, the perfect fly of natural size. 6, the larva at rest. 7, the cocoon. 8, one of the antennæ of the insect enlarged, showing the joints. 9, an enlarged egg of this insect. The fly belongs to the order *Hymenoptera*, and is known in popular language as one of the saw-flies. The larva is a soft dirty yellow worm, which feeds externally on the leaf of the strawberry. It is a little more than six-tenths of an inch long when full grown. Its head is of a more decided yellow colour than the rest of its body, and usually has a dark brown spot above, one nearly of the same size at the upper front, and two rather smaller ones at each side, joined by a brown line. It has twenty-two legs.

"The parent flies may be seen hanging to and flying around strawberry vines about the beginning of May, in North Illinois, Iowa and Michigan, in all three of which States we know them to occur. They are dull and inactive in the cool of the morning and evening, and at these hours are seldom noticed. They are of a pitchy black colour, with two rows of large transverse dull whitish spots upon the abdomen. The female, with the saw-like instrument peculiar to the insects of the great family (*Tenthredinidæ*) to which she belongs, deposits her eggs by a most curious and interesting process, in the stems of the plants, clinging the while to the hairy substance with which these stems are covered. The eggs are white, opaque and 0·03 of an inch long, and may be readily perceived upon splitting the stalk, though the outside orifice at which they were introduced is scarcely visible. They soon increase somewhat in bulk, causing a swelling of the stalk, and hatch in two weeks—more or less, according to the temperature—and from the mid-

dle of May to the beginning of June the worms attract attention by the innumerable small holes which they make in the leaves. The colours of these worms are dirty yellow and grey green, and when not feeding they rest on the under side of the leaf, curled up in a spiral manner, the tail occupying the centre, and fall to the ground on the slightest disturbance. After changing their skin four times they become full grown, when they measure about three fourths of an inch."

"At this season they descend into the ground, and form a very weak cocoon of earth, the inside being made smooth by a sort of gum. In this they soon change to pupæ, from which are produced a second brood of flies by the end of June or beginning of July. Under the influence of July weather the whole progress of egg-depositing, &c., is rapidly repeated and the second brood of worms descend into the earth during the fore part of August, and form their cocoons, in which they remain in the caterpillar state through the fall, winter and early spring months, till the middle of April following, when they become pupæ and flies again, as related. This fly has received the name of *Emphytus Maculatus*, by Norton, in allusion, doubtless, to the whitish transverse lines on the abdomen."

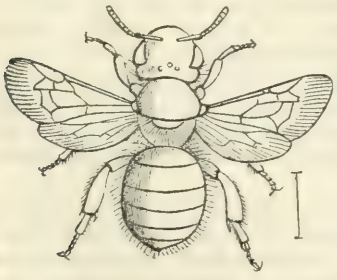
"With the facts here given, it will be no difficult matter for anyone interested to make war in his own way. The worm's habit of falling to the ground enables us to destroy them with a solution of cresylic acid soap, or any other decoction, without necessarily sprinkling the vines; while knowing that they are in the earth during the fall and early spring, when there is no fruit, the ground may be stirred and poultry turned in with good advantage."

Doubtless, also, our well-known panacea for the gooseberry sawfly, powered hellebore mixed with water, would do as good service here as it is known to do with that pest, as they both belong to the same family and have similar habits.

[NOTE.—Since the above was in type, I have heard of the occurrence of this insect in Warwick, Ontario, and also in Brantford, Ontario, where they are said to be so numerous, that thay soon strip a bed entirely of its foliage.]

11. OSMIA CANADENSIS—*Cresson.*

This is the name of a small hymeropterous insect, a sort of wild bee, which has proved destructive to the foliage of some strawberry plants during the past season, in the Township of Oxford. It was observed by Mr. Johnson Pettit, of Grimsby, who kindly furnished me with specimens of the insect. For the accompanying Figure 15, which represents the female, I am indebted to my esteemed friend, Mr. E. T. Cresson, of Philadelphia, who very kindly made the drawing from which the cut was engraved. I am also indebted to him for the determination of the species. Mr. Cresson first described this species in the *Proceedings of the Entomological Society of Philadelphia*, vol. 3, p. 33. In the figure the fly is represented on an enlarged scale: the hair line at the side shows its natural length. In both sexes, the head, thorax and abdomen is green and more or less densely covered with whitish down or short hairs, those on the thorax being longest. The wings are nearly transparent, with blackish veins. The female is larger than the male.



Mr. Pettit says, "The insects were taken in East Oxford, July 2nd, on a few strawberry plants in my brother's garden. The plants, perhaps nearly 100 in number, had been nearly all denuded of their leaves, and a search in the evening having failed to reveal the authors of the mischief, I examined them again in the heat of the day, and found the little culprits actively engaged in nibbling away the remaining shreds of the leaves. They appeared to chew the fragments into a pulp and carry it away, but the little time I spent in observing them was insufficient to determine anything further respecting their habits."

Doubtless in this instance the leaves so consumed were used in the construction of suitable nests, in which to deposit the eggs and rear the young of those insects.

A Strawberry Bug (*Corimelæna—?*).

The insect above referred to belongs to an entirely different order from any of those already treated of, its place being among the *Hemiptera* or true bugs, but in its general appearance it very much resembles a small beetle, and indeed it is often mistaken for one. This bug is about one-tenth of an inch long, nearly round, and of a deep shining black colour. Its habit is to puncture the stem of the fruit and thus cause it to wither. In the *Canada Farmer* for 1867, page 328, and also in that for 1868, page 189, references are made to this insect, and it would seem that about that time it was very troublesome to the strawberries in the grounds of Mr. Chas. Arnold, of Paris, Ont., but it does not appear to have continued its devastations sufficiently since then to attract much attention. Mr. Riley refers to it as occurring in the west quite abundantly in some localities.—See *Amer. Entomologist*, vol. 1, page 207. Besides being injurious to the strawberry, it is said to have affected the raspberry, the cherry and the quince.

INSECTS AFFECTING THE HOP.

By the Rev. C. J. S. Bethune, M.A.

1. The Hop Aphis (*Aphis humuli*, Curtis).
2. The Hop-vine Snout-moth (*Hypena humuli*, Harris).
3. The Semicolon Butterfly (*Grapta interrogationis*, Godt).
4. The Hop-vine Plusia (*Plusia balluca*, Geyer).
5. The Io Emperor Moth (*Hyperchiria varia* Walker).

The cultivation of the hop has never attained to any very large dimensions in Canada, though at times, when prices have been high, it has attracted no little attention amongst the farming community. Just now the acreage occupied by this plant in Ontario is probably considerably below what it was some four or five years ago, but even yet many a lovely trellised field may be seen here and there as one travels through the country. As, however, there is nothing in our climate or soil that is unsuited to the successful growth of the plant, we have little doubt that its culture will one day become an object of great and extended importance, unless, indeed, the Canadian entirely relinquishes his English taste for malt liquor in favour of the far more baneful spirits that are now a curse to so many. The present production of malt liquor in the Dominion of Canada averages nearly eight millions of gallons a year; in the manufacture of even this amount a very considerable quantity of hops is consumed, and if we add to it the quantity that is exported to England and the United States, it is apparent that the culture of this plant cannot be considered an unimportant item in the resources of the Canadian agriculturist. There is no doubt too, that if our hop growers paid more attention to the selection of the most approved English varieties for cultivation, and were more particular in regard to the picking and curing of their hops, they would be enabled to obtain much better prices for their crop, and would secure an unfailing market in Europe for all that might not be required here. But even should the hop, as is by no means likely, cease to be a sufficiently attractive article of commerce to lead our agriculturists to devote any of their broad acres to its cultivation, it will never fail, at least, to occupy a conspicuous place in the good wife's kitchen garden on account of its value in the production of yeast. Such being the case, then, we imagine that some account of the insects affecting this plant will not be out of place in these reports, and may prove of interest, and possibly of value, to many.

Before proceeding to the discussion of its insect enemies, we may remark that the common hop plant (*Humulus lupulus*, Linn.) is apparently indigenous to the western parts of this country as well as to Europe. We have seen it growing in great luxuriance and gathered sprays of its clustering flowers on the fertile banks of the Kaministiquia River, a few miles above Fort William, Lake Superior. It is said also to be found in a wild state on the borders of the Mississippi and Missouri rivers. The hops of commerce consist of the female flowers or seeds—the plant being dicœcious *i.e.* with stamens and pistils in separate flowers on different individuals. The male flowers are very different in

appearance from the female, and are grown in hop yards at about the rate of six plants to an acre, for the purpose of fertilizing and maturing the hop blossoms.

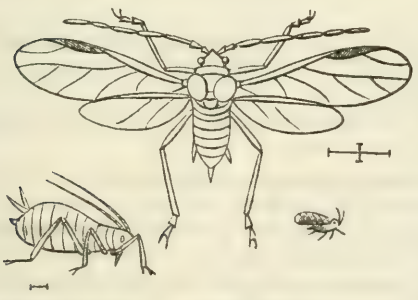
The Hop Aphis (*Aphis humuli*, Curtis).

1. Hemiptera Homoptera—Aphidæ.

It would almost appear as if no catalogue affecting any particular plant could be complete without referring to some species of Aphis, or Plant-louse, so ubiquitous and destructive are these tiny creatures. We have already noticed in these reports * the particular species that infest the apple and the wheat, and have recounted the damage that they oftentimes inflict. But when we come to the Hop we find that the Aphis, or "Fly" as it is termed in England, is, *par excellence*, its greatest enemy, and that the profits of the grower depends very largely upon the presence or absence of the hordes of this minute foe. As Kirby and Spence so strongly state, "the hop-grower is wholly at the mercy of these insects; they are the barometer that indicates the rise and fall of his wealth, as well as of a very important branch of the revenue—the difference in the amount of the duty on hops (in England, being often as much as £200,000 per annum, more or less, in proportion as the *fly* prevails or the contrary." In this Province we have seen the produce of a field of many acres almost utterly ruined by this insect—the amount of hops produced being diminished more than one-half below the average, and the quality of that which was gathered very much impaired.

The Hop Aphis resembles very closely in size and appearance the species that infest many other plants. As we have already described similar species in these Reports (1*st Report*, p. 77; 2*nd Report*, p. 57), we need do no more than state that the enemy of the Hop is green in colour, and about one-tenth of an inch in length when fully grown. The accompanying illustrations display the shape and structure of the creature. Fig. 16

Fig. 16



represents a highly magnified winged male above; below it, on the right hand side, a male of the natural size, and on the left a magnified female. Fig. 17 represents a female on a very much larger scale. Notwithstanding the similarity in colour which exists between these insects and the leaves and stems of the Hop-plant, their presence may be immediately detected by the blackish discolouration of the leaves below where they are at work. This is caused by the continual exudation from the insects of a sweetish fluid called "honey-dew," which is emitted from the two processes that project from each side of the extremity of the abdomen. As we have remarked on a previous occasion, many insects, and especially ants, are very fond of feeding upon this sweet substance; the latter even go so far as to perform upon the Aphis an operation analogous to that of milking a cow, for the purpose of obtaining this sweet fluid. And not content with this, some species of ants make a property of these Aphis cows, jealously guarding them, and using every means to keep them to themselves. As related by Kirby and Spence: "Sometimes they seem to claim a right to the Aphides that inhabit the branches of a tree or the stalks of a plant; and if stranger ants attempt to share their treasure with them, they endeavour to drive them away, and may be seen running about in a great bustle, and exhibiting

Fig. 17.

* *First Annual Report*—Insects affecting the apple, p. 77; *Second do*—Insects affecting the wheat crops, p. 57.

every symptom of inquietude and anger. Sometimes, to rescue them from their rivals, they take their Aphides in their mouth; they generally keep guard round them, and when the branch is conveniently situated, they have recourse to an expedient still more effectual to keep off interlopers. They inclose it in a tube of earth or other material, and thus confine them in a kind of paddock near their nest, and often communicating with it."

Another curious and noteworthy fact in the history of Aphides is their occasional migration from one place to another in enormous swarms. Nearly a century ago Gilbert White observed at Selborne, in Hampshire, a shower of Aphides, which covered persons walking in the street, hedges, garden plants, and everything else that came in their way; he considered that they were borne by the east wind from the great hop fields of Kent and Sussex. Kirby and Spence mention similar swarms in the vicinity of Ipswich in 1814, and at Hull in 1836. To come to later times, Mr. Knaggs relates (*Entomologists' Monthly Magazine*, No. 5, p. 123) that on the 14th of July, 1864, "whilst walking along the beach from Bournemouth towards Poole, a strange mossy-looking, green track, which varied in width from one to three or four inches, arrested my attention; this moss-like line, left at high-water mark by the tide, extended, so far as my observation went, for a mile, though probably to a far greater length, and consisted of millions upon millions of Aphides." The following year, it is stated by Mr. Haswell (*Ent. Mag.*, No. 18, p. 142) that the Aphides were a perfect pest in Edinburgh and other parts of Scotland in September and October; they swarmed over everything even in the streets of cities, and to such an extent that "they rendered one very uncomfortable by their numbers, especially when they got into one's mouth or eyes!"

The numbers and devastating powers of the Hop Aphis being so great, it becomes necessary oftentimes to apply some artificial remedy in order to save the crop from entire destruction. In parts of England where the labour of women and children can be obtained at a cheap rate, it has been recommended to clear the plants of insects by hand; but any such mode of dealing with them is quite out of the question in Canada.. We must then have recourse to some other expedients. The following we believe to be the most efficacious:

(1.) Make a mixture of strong soap-suds; add to it salt and saltpetre till a brine is made about half as strong as ordinary beef pickle; add further a pound of copperas dissolved in warm water to every five gallons of liquid. Or

(2.) Make a strong decoction of tobacco by boiling at the rate of a pound of stems and refuse parts, or other cheap tobacco, to a gallon of water.

As soon as the insects are observed on the vines (or *bines*, as hop-growers term them,) they may be at once detected by the discolouration that we have referred to above. Go through the rows with a supply of either of these mixtures, and sprinkle them thoroughly with it. As the insects are for the most part congregated on the under side of the leaves, it is necessary to use a strong syringe, or better, a small garden engine with a rose-nozzle attached, and squirt the liquid upon the insects from beneath. Constant watchfulness and a diligent application of these means will keep a hop-yard clear of these insects, without incurring any very great expense. The modern system of training the vines upon horizontal trellises, instead of long poles, renders easy the successful employment of this method.

Another remedy that has been highly spoken of is the dusting of the affected plants with powdered plaster, which not only kills the Aphis, but is of benefit to the soil as well. Instead of plaster, sulphur, or lime may be employed with advantage, the former being especially useful also as a preventative for mildew.

Fig. 18.

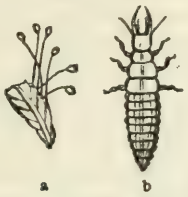
In addition to the use of the artificial remedies just referred to, much benefit may be derived from the encouragement of various insects that prey almost exclusively upon the various species of Aphis. As we have before stated, when giving an account of the enemies of the Grain Plant Louse (*2nd Report, p.* 58), "the most common and useful are the different species of Lady-birds (Fig. 18); the Lace-wing Flies (*Chrysopa*), both in their perfect state (Fig. 19), and in their larval condition (Fig 20);

the Syrphus Flies in their larval state (Fig. 21); Fig. 22 represents a winged Syrphus Fly; Dragon Flies, &c.; all of which should be heartily encouraged by the husbandman."

Fig. 19.

It is a singular fact that the Lady-birds (*Coccinellidæ*), the first mentioned of the foes of the Aphis, occurs at times in immense swarms, like those of its prey to which we have already referred. Vast numbers of these little beetles are sometimes found on the shores of lakes

Fig. 20.



a b

Fig. 21.

Fig. 22.

and rivers, and along the sea coast. Kirby and Spence state that "many years ago the banks of the Humber in England were so thickly strewn with the common Lady-bird, that it was difficult to avoid treading upon them." On another occasion they were observed in vast numbers on the sand-hills of the sea shore in Norfolk; again they covered the cliffs of Kent and Sussex, "to the no small alarm of the superstitious, who thought them forerunners of some direful evil!" In the summer of 1870, they were observed in various parts of England in countless numbers, while some other places were visited by swarms of Syrphus Flies—another enemy to the Aphis. The sudden appearance of all these creatures is accounted for by the supposition that the simultaneous hatching of a large number in one locality caused a scarcity of food there, and compelled many of them to move elsewhere. On coming to some obstruction, such as the sea, they would accumulate in masses and so attract general attention. In *Newman's Entomologist* (No. 73, p. 16), it is stated that during the prevalence of the swarms of Lady-birds in 1870, "Mr. Jansen had an apple tree completely covered with black aphides, the whole of which were cleared off in three or four days by Coccinella septempunctata.

We trust that all who read these Reports,—farmers, gardeners, and hop-growers especially—will make it a rule never to destroy any of these most useful little creatures, and will also impress upon all connected with them the importance of following their example in this respect.

2. The Hop-Vine Snout-Moth (*Hypena humuli*, Harris).

Lepidoptera Pyralidæ.

Next in destructiveness to the Hop-aphis comes, in this country, the Snout-moth; at times, indeed, it more than rivals in its injuries the other noxious insect. In the month of June, earlier or later according to the season, the Hop-grower may frequently observe the leaves of many of his vines riddled with holes, or eaten down to the ribs. On inspection, he finds a small caterpillar at work, pale green in colour, with a dark, almost blackish longitudinal stripe on the back, and two narrow white lines on each side. Sometimes these lines are wanting. The body is long and slender, with its wings or segments very prominent; each segment is furnished with two transverse rows of black dots, from each of which proceeds a short hair. The head is rather deeply divided into two lobes, and is covered with similar dots and hairs; the mouth is yellowish, with the jaws tipped with black. Unlike the majority of caterpillars, this creature is furnished with only seven instead of eight pairs of legs, being destitute of the first pair of pro-legs beneath the middle of the body. The result of this deficiency is that the caterpillar is obliged to loop itself up to a slight extent when crawling, though not to the same degree as the Geometer or measuring worms, (*Geometridæ*). When fully grown it is over half an inch in length. It is a particularly active creature, and when disturbed jerks its body from side to side, and leaps from one spot to another; it is also able to let itself down

from its leaf by a fine silken thread. After it has attained to maturity it descends to the ground, and crawling into any crevice or other place of concealment, forms a slight silken cocoon and changes into the chrysalis state. In this condition it remains for a fortnight or three weeks, and then comes forth at the end of June or early in July as a dusky brown moth, measuring an inch and a quarter across its expanded wings. The fore-wings are marbled with gray beyond the middle, and have a distinct gray spot on the tip; they are crossed by two wavy blackish lines, one near the middle and the other near the outer hind margin. These lines are formed by little elevated black tufts, and there are also two similar tufts on the middle of the wing. The hind wings are dusky brown or light brown, with a pale fringe, and are without bands or spots."—(Harris). A peculiarity of the insect, from which it derives its common name of "Snout-Moth," is that it has a pair of very long and slender compressed palpi or feelers, which project from the head in the form of a snout. The accompanying wood-cut (Fig. 23) represents the creature in all its stages. There are two broods in the year; the caterpillars of the second appear in July and August, and attain to the imago state in September.

Fig 23.

This insect is rather variable in its appearance, but is oftentimes excessively destructive. In 1869 we observed two Hop-yards in the County of Peel almost ruined by it, while in the preceding and succeeding years no great number of the caterpillars was to be seen. Dr. Fitch considers it "the most universal and formidable of the depredators of the Hop, making its appearance suddenly, in a few days sometimes, and before their presence is noticed completely riddling and destroying the leaves of whole fields." In Europe there is a similar insect, termed the Beaked Snout-Moth (*Hypena Rostralis*, Linn), which may be identical with our species; probably, indeed, our insect, like so many of our greatest pests, has been introduced from the other side of the Atlantic.

The most approved remedy for the insect is to drench the vines with strong soap-suds. To shower them with powdered white hellebore mixed in water—an ounce of the drug to a pailful of water—would, we should think, be even more effective. Much might also be done by jarring the poles among which the Hops are entwined, and crushing under foot all the caterpillars that fall to the ground.

3. The Semicolon Butterfly. (*Grapta interrogationis*, Godt.)

Lepidoptera—Nymphalidæ.

The two species already described are by far the worst insect enemies that the hop-grower has to deal with. The others to which we now desire to draw attention are seldom found in sufficiently large numbers to cause much alarm, though at times their depredations are somewhat serious, especially when they attack a few hop-vines in a garden.

The species before us, the Semicolon Butterfly (*Grapta interrogationis*, Godt), is a large handsome insect, with wings above of a tawny orange colour, spotted with black and brown; beneath, the wings are in some specimens rusty red, in others marbled with red and brown tints; in the middle of the underside of the hind wings there is a conspicuous silvery mark, shaped like a small semicolon (;), from which the species derives its name. The modern semicolon is employed in the Greek language as the mark of interrogation; hence both common and technical specific names have the same meaning and refer to the same characteristic. The wings of this butterfly measure, when expanded, as much as two and a half to three inches. There are two broods of them in the year, the first late in June, the other in August.

The larva feeds upon the leaves of the elm and basswood, as well as upon the hop. When partially grown, in the early part of August, it is thus described by our friend Mr. Saunders:*—"Length, half an inch. Head black; body above, black, with transverse

*Canadian Entomologist, vol. 1, p. 76.

rows of branching spines, those on the third, fourth, and terminal segments black, with a row of the same colour along each side, close to the under-surface; all the other spines pale whitish. Under-surface nearly black, with dots of a pale hue." When fully grown, and an inch and a quarter in length, Mr. Saunders describes it as follows:—"Head reddish black, flat in front, somewhat bilobed, each lobe tipped with a tubercle, emitting five simple black pointed spines; head covered with many small white tubercles mixed with a few blackish ones. Body above, black, thickly covered with streaks and dots of yellowish white. All the segments, except the second, with either four or seven branching spines yellow with blackish branches. Under surface, yellowish grey; feet, black and shining; pro-legs, dull reddish."

The chrysalis is ashy-brown in colour, with the head deeply notched, and surmounted by two projections resembling ears; on the thorax is a long, nose-like prominence, giving the creature the appearance of a grotesque mask; and on the back are eight silvery spots. It is suspended by the tail, frequently under the leaves of the plant, at other times under any convenient projection. In this state the insect remains from twelve to fourteen days; the later brood usually somewhat longer.

This insect is greatly kept in check by a minute parasite belonging to the family of Ichneumons; it is called by Dr. Harris the *Pteromalus Vanessæ*. We have oftentimes been disappointed in our attempt to raise the butterfly of this species by this little fly. Everything apparently goes on well, and the caterpillar assumes the chrysalis state, but by-and-by, instead of a butterfly, out comes, through a hole in the side, a swarm of tiny flies. If it were not for these creatures the caterpillar would soon become a most formidable and destructive pest.

Fig. 24.

There are two other species of American Butterflies, whose larvæ feed upon the hop; one, not uncommon in Canada, the Comma Butterfly (*Grapta Comma*, Harris), is like the preceding species, in general appearance and habits; instead of a semi-colon, it has a silvery comma on the middle of the hind-wings beneath.

Fig. 24 represents this butterfly.

The caterpillar feeds also upon the currant and elm. The other species is the Hop vine Thecla (*Thecla humuli*, Harris; *melinus*, Hubner). It ranges from the New England States to Texas and California, but we are not aware that it has yet been taken in Canada.

4. The Hop-vine Plusia (*Plusia balluca*, Geyer).

Lepidoptera-Plusidæ.

The larva of this very handsome moth feeds upon the hop, and is occasionally found in some numbers; seldom, if ever, however, is it so numerous as to become a source of serious trouble. It is essentially a Canadian insect, being but very rarely observed to the south of us.

The larva was found by Mr. W. Saunders, of London, Ontario, on the 13th of June, 1872, and is thus described by him in the January No. (1873) of the *Canadian Entomologist*:—

"Length, 1·20 inch. Body, thickest on middle, and posterior segments tapering towards the front; the body is arched or looped along the middle segments, when in motion.

"Head rather small, bilobed, of a shining green colour, with a few whitish hairs.

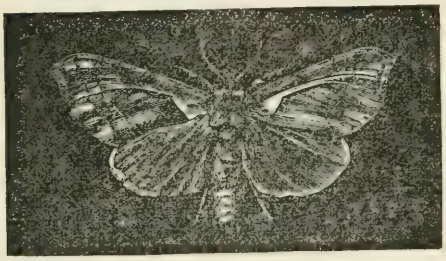
"Body above yellowish green, streaked and spotted with white, intermixed all through with green, thus dividing the white into a series of streaks, dots, and broken lines; there is also a line of greenish white on each side, close to the under surface. Each segment has a few tubercles of a green colour, striped with white; these are small on the 2nd, 3rd, and 4th segments, but much larger from 5th to 12th inclusive, and entirely wanting on the terminal segment. On each of the hinder segments, with the exception of the last,

there are ten or twelve of these tubercles, which almost cover the whole surface, and from each of the tubercles throughout there arises a single whitish hair.

"The under surface is of a deeper green than the upper, with a few short whitish hairs, chiefly on 5th, 6th, 7th, 8th, 11th and 12th segments; feet, green; pro-legs, of which there are three pairs, green also.

"This larva became a chrysalis on the 18th of June, and produced the moth on the 13th of July."

Fig. 25.



The Moth (Fig. 25), into which this caterpillar turns is a remarkably handsome creature; the fore-wings are almost entirely covered with brilliant metallic green scales, darker below the middle, and paler towards the inner angle; they are crossed by two oblique dark lines. The hind-wings are a dusky grey, without markings. The wings expand about an inch and three quarters. We have usually taken the moth in the month of August, and have found it in various parts of this Province.

As this species is seldom numerous, it is unnecessary to suggest any remedy. In all probability its numbers are prevented from becoming excessive by some insect parasite.

5. The Io Emperor Moth (*Hyperchiria varia*, Walker).

Lepidoptera-Saturniadæ.

Besides the foregoing, there are two other insects that affect the hop-vine, respecting which we would say a few words before leaving this subject. One of these is so very general a feeder that it can hardly be termed a Hop insect; it is the larva of what is commonly known as the Io Emperor-Moth, of Harris (*Hyperchiria varia*, Walker). It feeds indiscriminately upon the leaves of willow, elm, white poplar, cornel, sassafras, cherry and locust, as well as the Hop; it is even said to eat clover and the leaves of Indian corn. When first hatched out, the caterpillars are dark brown, and covered with bristles; later on, when about a third of an inch in length, their general colour is black, the body being entirely covered with long sharp branching spines, and having two reddish white lines along the sides. When fully grown, they attain to a length of two and a half inches, and are of a delicate yellowish green colour, with a reddish lateral band, not extending the whole length of the body towards the head; the spines are then of a pale yellowish green colour, and have an irritating property, like that of the stinging nettle. Specimens that we have reared formed their cocoons in September, and appeared in the perfect state in the following June. The Moth varies very much in the two sexes, but both are remarkably handsome. The male is of a deep yellow colour, with a few darker lines across the fore-wings; the hind-wings are broadly bordered with purplish red next to the body, and have in the middle of each a large and beautiful eye-like blue spot. The female, which is usually larger, has its fore-wings, of a purplish brown colour, with grey transverse lines, and its hind-wings coloured like the male, and with a still larger eye-like spot.

The insect is quite common throughout Canada and the Northern States, but never so numerous as to be considered destructive. The Moth is one of our most beautiful species.

One other insect, to which we just now referred, is one of which we do not know the name, as we have only seen it in its larval state.

On the 27th of June, 1868, about a pint of larvæ were sent us by Mr. Wm. Magrath, of Erindale, Credit, which he had taken from the roots of his hop-plants. They fed upon the crown of the root, at its junction with the stem, and ate out a roundish cavity in it;

two or three often worked together at the same root. We endeavoured to rear them to the perfect state, but did not succeed, and have never had an opportunity since. We give a full description of the larva taken at the time, in the hope that some of our readers may be able to identify it.

Length, 1·25 to 1·50 inch. Ground-colour, dirty white; head, chestnut-colour; mandibles, black. Body, with a pale narrow dorsal line; first segment above, with a glassy shield-like patch, dirty yellow, with a black edge in front; below this, on each side and above the first pair of legs, two black shining dots, the anterior one larger than the other, which contains the spiracle. On each side of the dorsal line, a dusky lilac stripe; and on each segment a darker flat wart in front, and a blackish dot behind, on the lower side of the stripe. Next, a pale line, broader than the dorsal line; a lilac line of the same width; another pale line; a lilac tubercled stripe, having on each segment a black-tipped wart in the middle above, a tiny black dot lower down, behind it the shining black spiracle, and then another black-tipped wart; next, a pale stripe, with a black wart on each segment, except the first and the tenth, which have each two small warts; below this another faint lilac stripe, along the top of the pro-legs. The anal segment shining black above, white elsewhere; and pro-legs blackish exteriorly. From each of the warts alluded to there proceeds a single dark bristle. The larva has its full complement of sixteen legs.

The more mature specimens have the lilac stripes more obscure, and the black warts, therefore, more conspicuous; while the less mature specimens have the lilac stripes much more developed and spot-like on the segments, rendering the black warts much less apparent.

INSECTS INFESTING MAPLE TREES.

By E. B. Reed, London, Ont.

1. The Maple Borer or Beautiful Clytus (*Clytus speciosus*, Say).
2. The Rosy Forest Caterpillar (*Dryocampa rubicunda*, Fab.)
3. The American Silkworm (*Telea polyphemus*, Linn.).
4. The Cecropia Emperor Caterpillar (*Platysamia cecropia*, Linn.).
5. The Maple Owlet Moth (*Apatela Americana*, Harr.).
6. The Banded Maple Moth (*Ophiusa bistriaris*, Hubner).
7. The Maple Leaf Cutter (*Ornix acerifoliella*, Fitch).
8. The Maple Measuring Worm (*Stegania pustularia*, Guènee).

The cultivation and protection of our forest trees is a subject which is, as each succeeding year rolls by, being slowly but forcibly brought to the notice of our Canadian agriculturists.

The rapid destruction of timber trees for fuel and building purposes, and the very evident effect that is being gradually produced on our climate and soil, added to the lessons that experience in other countries affords, ought certainly to attract the attention of every well-wisher to our future prosperity. Whilst the forests of Canada are justly a source of much pride and material wealth to the community, the Maples amongst all our native trees are perhaps the best known and the most highly and widely esteemed.

Admirably adapted for shade and ornamentation, whether for garden, park, or field, most excellent for fuel, exceedingly beautiful when worked up by the cabinet maker, and especially valuable for their saccharine matter, the Maples surely stand preëminent among our native Canadian forests.

It is, therefore, very desirable that we should examine and learn something of the habits and history of any insects whose depredations would affect the growth or well-being of these beautiful trees.

1. THE MAPLE BORER (*Clytus speciosus*, Say).

Order, Coleoptera; Family, Cerambycidæ.

This destructive insect belongs to a family of beetles known as the Long-horns or Capricorns, the grubs or larvæ of which are all *borers*, penetrating with ease the hardest timber, and causing immense devastation amongst the respective trees which they severally affect.

In consequence of their habits, which are exceedingly varied, the proceedings of the larvæ are difficult of observation, some living altogether in the main trunk of trees, while others attack the branches only, some devouring the wood, others the pith.

The number of species in this family is very large, and there is hardly a single kind of tree that is exempt from the attacks of one or other of these Borers.

The Maple Borer or *Clytus speciosus* was first observed and described in its beetle state by Mr. Thomas Say, in 1824. It is a very beautiful insect, and may readily be distinguished by its brilliant black and yellow colours, giving it much the appearance o

a large hornet, so much so, indeed, that very few persons except Entomologists would at first sight care to touch it. In England there is a similar but smaller beetle, *Clytus arietis*, popularly known as the Wasp beetle, a member of the same family as our Maple Borer. The latter, when arrived at its perfect state (See Fig. 26), varies from 9 to 12 tenths of an inch in length, and from 3 to 5 tenths in width. The head is yellow and furnished with powerful mandibles or jaws; the eyes and a band above them extending across the head are black; the antennæ or horns are also black, and are curved somewhat after the fashion of those of a goat, a similarity which gave rise to their general name of *Capricorns* or goat-horns. The thorax is deep black, with two yellow oblique stripes on each side; it is very large, somewhat globular, and flattened or depressed above. The body is deep black, oblong, somewhat cylindrical, a little flattened above, and tapering behind. The elytra or wing covers have yellow bands, the first o which forms a regular arch, of which the keystone is composed of the yellow scutel or little shield-shaped spot at the top of the wings, just behind the centre of the thorax; the second band is in the form of the letter W, each V receiving a termination of the first band; the third band is nearly transverse, and placed across the middle; the fourth is bent obliquely backward, parallel with and near to a large terminal spot or band, which latter has a large black central spot on each wing case.

Fig. 26.

Colours—Yellow & black.

The elytra are each tipped with a short blunt tooth. The legs are long and yellow, with a brown line on the inner side of the thighs; they are made for standing securely, being very broad, and with the third joint deeply notched. The underside of the abdomen is reddish-yellow, variegated with brown. Figure 26 represents the male. The female is larger and stouter than the male, and has rather shorter antennæ. She may also be easily distinguished by having a jointed tube at the end of the abdomen, which is capable of being extended or contracted at will, and is used for the purpose of conveying the eggs into the crevices or holes of the bark of the trees. These insects emit a shrill, screeching noise on being handled or disturbed. This noise is caused by rubbing the joints of the thorax and abdomen together.

The beetles may generally be seen reposing quietly on the trunks of the trees during the day time, as they are more active at night, which period they select for their excursions in search of their mates. According to Mr. Harris, the beetle lays its eggs on the trunk of the maple in the months of July and August.

The larvæ hatched from these eggs are long, whitish, fleshy grubs, with deeply marked transverse incisions on the body. Their legs, which are six in number, are only rudimentary and are of no service in locomotion; it is by means of the alternate contraction and extension of the rings or segments of the body that these little creatures force their way through the wooden tunnels in which they live, and in order to further assist their progress each segment is furnished with fleshy tubercles capable of protusion, and which, being pressed against the sides of their retreats, enable them to thrust forward by degrees the other segments. As the grub has to feed upon very hard material it is provided with strong horny jaws, and the head, which is slightly bent downwards, is also covered with a strong horny skin. The grubs penetrate the bark, under which they lie dormant during the winter, and in the succeeding spring and summer they pierce further in, running long winding galleries up and down the trunk. The larvæ probably remain more than one year in this condition and then change into pupæ, in which state they are at first whitish and very soft, but gradually harden and darken until the time arrives when the beetle is perfectly matured, and forcing a passage through the outer bark, near which it has instinctively eaten its way whilst yet a grub, emerges into the open air.

Although the attacks of these beetles are not as yet of any great extent, still in some localities they have done a good deal of harm. In and near London, especially, we are aware of many fine and valuable maples, chiefly the hard or sugar maple, *Acer saccharinum*, that are being gradually destroyed by the operations of these insects. Their attacks can readily be detected by the sawdust and exuviæ that they cast out of their burrows, and in the spring, whilst still near the surface, it is quite possible to kill them by means of a stout piece of wire, or the judicious use of a good sharp knife.

2. THE ROSY FOREST CATERPILLAR (*Dryocampa rubicunda*, Fab.).

Order, LEPIDOPTERA : Family, DRYOCAMPA.

The last described insect, as we have seen, attacked the wood only of the trees, but the insects we are about to treat of devour the leaves, and by their attacks on the young buds materially affect the growth of the young maples.

The name *Dryocampa*, signifying oak or forest caterpillar, was originally applied by the late Dr. Harris, the talented Entomologist of the State of Massachusetts, to certain insects found sometimes in great numbers on oak trees, and of which one species, *Dryocampa senatoria* is exceedingly common in the larval state. The Ruby Forest Caterpillar, however, is generally found on the silver maple, *acer dasycarpum*, or the swamp maple, *acer rubrum*.

The caterpillars are hatched about the month of July, and their presence may often be detected by their droppings on the ground beneath the trees, although it is not always easy to discover the insect itself. Mr. William Saunders has bred the moth from the larva, and we therefore avail ourselves of his description published in the *Canadian Entomologist*, Vol. II., page 60.

The larva when full grown is about one inch and three quarters long. The head is rather small, flattened and bilobed in front, of a pale orange colour, and having a black dot on each side below, near the mandibles or jaws. The body above is yellowish white, with a stripe of rather indistinct pale green on the back, and three stripes of the same hue on each side. *The third segment has two black horns fully one tenth of an inch long*, one on each side of the dorsal stripe, and spreading outwards. On each segment are several black dots or tubercles, those on the twelfth and thirteenth segments being the most distinct. On the sides of the posterior segments is a pale reddish, orange patch, nearly the colour of the head. The under surface is deep, glossy green, with a faint whitish line down the middle, and many small blackish dots or tubercles. The feet are pale reddish ; the pro-legs pale green, dotted with black.

The larvæ having arrived at maturity seek shelter in the ground, and there undergo their transformation into the pupal state, remaining thus all the winter and spring, and emerging as perfect moths the following summer. The method by which the apparently inanimate pupa effects its escape has been well described by Dr. Harris in writing of a very similar insect—the *Dryocampa imperialis:* " The Chrysalis is rough with little elevated points, particularly on the anterior extremity, and ends behind with a long forked spine, and is surrounded on each ring with a notched ridge, the little teeth of which point towards the tail. Three of the grooves or incisions between the rings are very deep, thus allowing a great extent of motion to the joints, and these with the notched ridges and the long spine at the end of the body, enable the chrysalis to work its way upwards in the earth above the surface of which it pushes the fore part of its body just before the moth makes its escape."

Fig. 27.

Colours—Pale yellow and rose.

The perfect insect, of which Fig. 27 represents the male, is a very beautiful and delicately coloured creature. The forewings are rose coloured crossed by a broad pale yellow band ; the hind wings are pale yellow with a short rosy band behind the middle, this in some specimens especially males is wanting ; the body is yellow ; the abdomen and legs are rose coloured. The male expands about one inch and three quarters, while the female reaches fully two inches, the body of the male does not extend beyond the hind wings as does that of the female. The antennæ of the latter are simple and thread like in form while those of the male, as will be seen on referring to the figure, are deeply pectinated or comb shaped to much beyond half their length, and minutely serrated or saw-shaped from thence to the tips. Dr. Harris conjectured that sometimes two broods might occur in the season ; as in 1842, he captured specimens of the larvæ in July which produced the moth in August, and in September following, he took many more caterpillars. He, however, accounted for this on the ground, " that all insects have their periods of increased numbers which in some instances may be unfixed

and irregular, but in others their periods of numbers are as fixed and regular as that of the seventeen year locust.

For young trees which are easily accessible the caterpillars may be collected by hand and destroyed.

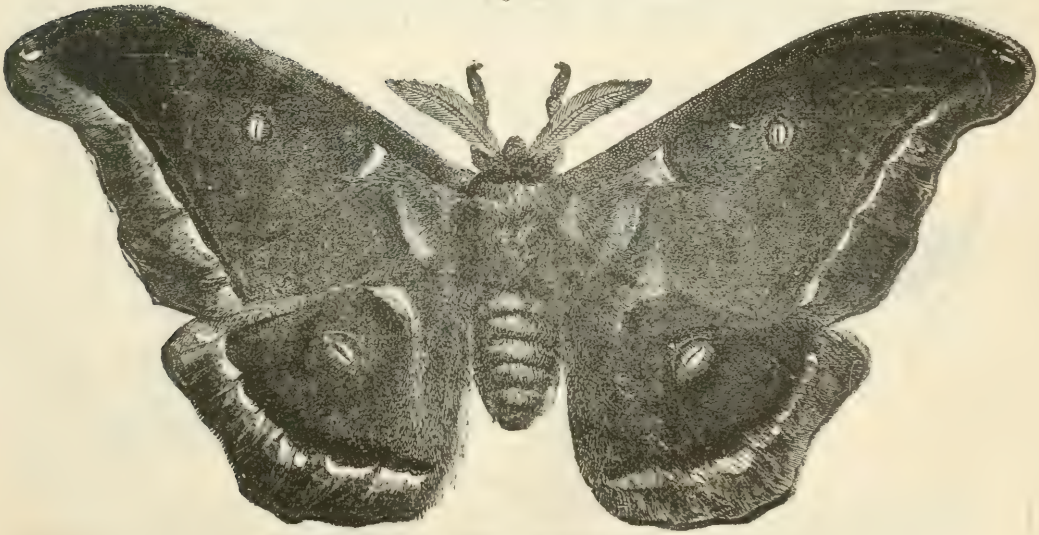
As the moths, being night fliers, are not very often seen, it might be a good idea to try the entomologist's plan for collecting moths viz: Placing a piece of rag saturated with sugar at night on the trunk of the tree, and visiting it occasionally with a lantern, and capturing with a net any of the moths that are sure to be found feeding on the attractive sweets.

3. THE AMERICAN SILK WORM (*Telea Polyphemus*, Linn.)

Order. LEPIDOPTERA; Family, BOMBYCIDÆ.

Fig. 28. Female.

Fig. 29 Male.

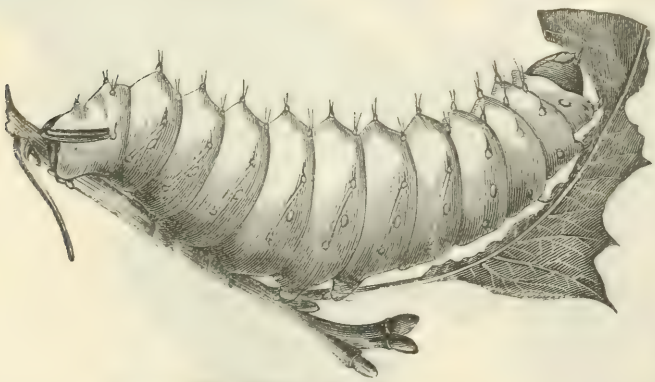


Colours—Dull ochre yellow—purplish bands and eyes.

This magnificent insect belongs to the same Family as the well known Chinese Silk Worm, *Bombyx mori*. It has received the especial name of THE American Silk Worm, because for all practical purposes it is the only American silk-spinner now known that can be rendered of any commercial value. For many years *Sericiculture* or the art of raising silk producing insects, has been very seriously threatened with great loss if not entire destruction by the various epidemic diseases that affect the Mulberry silk-worm. Much attention has therefore been paid lately towards acclimatizing in Europe and elsewhere, other silk producing Bombyces in order to supersede if necessary the mulberry species. *Telea Polyphemus* being found easy of propagation, its whole history is well known and we, therefore, purpose to give our readers a detailed account of its various transformations, the more especially as it is a tolerably common insect and from its size and splendid appearance both as larva and moth, it is sure to attract attention and excite the curiosity of those who see it. Hitherto it has been supposed to feed only on oak, and those who have bred it in large numbers for the silk market have raised it exclusively on oak leaves, but it, nevertheless, frequently attacks the maples and from the enormous size of the caterpillar and its voracious appetite, a great deal of damage is often done. Figures 28, 29 are admirable illustrations of the perfect moth, male and female. Dr. Harris thus describes its appearance: "Its wings are cut off almost square at the corners. It is of a dull ochre-yellow colour more or less clouded with black in the middle of the wings, on each of which there is a transparent eye-like spot, divided transversely by a slender line, and encircled by yellow and black rings; before and adjoining to the eye spot of the hind wings is a large blue spot shading into black; near the hinder margin of the wings is a dusky band edged with reddish white behind; on the front margin of the fore wings is a gray stripe which also crosses the fore part of the thorax, and near the base of the same wings are two short red lines edged with white." On the under side the colours are paler, but the bands are more distinct. The antennæ are broad especially in the male and deeply pectinated. The wings expand from five to six inches. When at rest the wings are held elevated above the body like those of a butterfly, but if disturbed they are spread out flat, both pairs being displayed. The moth usually flies towards dusk or in the early part of the evening. The moths make their first appearance about the month of June. The female lays a large number of eggs; she deposits them on the underside of the leaves leaving but a single egg in each place.

Mr. L. Trouvelot, in an admirable article in the *American Naturalist*, has given a very interesting account of his success in raising large broods of these caterpillars, having had in 1865, five acres of woodland swarming with insect life, numbering not less than a million. According to him "the incubation of the egg lasts from ten to twelve days." The caterpillar eats its way out of the egg, the shell of which it devours. The Larva (Fig 30) attains its maturity in about 70 days, having changed its skin five times during that period.

FIG. 30.

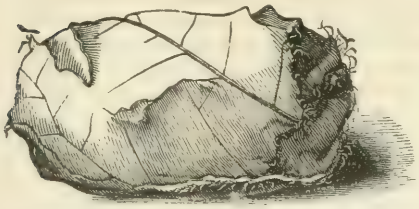


Colour -Pale, bluish green-orange; t.

It is about three inches in length, though it has a peculiar fashion of contracting its body, and hunching up its segments, when not in motion. Its colour is pale bluish green. The segments are covered with orange or reddish warts, or tubercles which have a pearly lustre, and are furnished at their extremities with a few hairs. The head and feet are brown, and the tail or anal segment is bordered with a brown V shaped line. The sides of the body are striped obliquely with white.

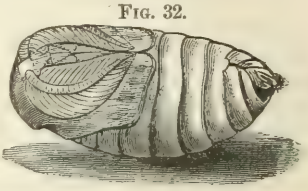
The cocoon, (Fig 31) which is of a regular oval shape and about two inches long, is formed

Fig. 31.



by fastening together a few leaves with silken threads, in the interior of which the larva spins a second strong and very close cocoon in which it changes into the pupa (Fig 32). These cocoons fall with the leaves in the autumn, and remain on the ground during the winter until the perfect insect emerges. The pupa is very thick and short, and shows very clearly the antennæ and wings. The larva takes about a week to complete its cocoon. The silk of which the inner one is formed is very glossy, rather coarser than that of *Brombyx mori*, and according to M. Trouvelot, can be used very extensively in commerce. It has a continuous thread and can be readily unwound. We are not aware what the actual length of the silk in each cocoon amounts to, but it must be something very great, if one may judge it by comparison with that of the Chinese silk worm. Rennie, in his *Insect Architecture*, in speaking of the latter states, "that the length of the unbroken thread in a cocoon varies from six hundred to a thousand feet; and as it is all spun double by the insect, it will amount to nearly two thousand feet of silk, the whole of which does not weigh above three grains and-a-half; five pounds of silk from ten thousand cocoons is considerably above the average." When we see the enormous difference in size between the cocoons of *Polyphemus* and *mori*, we can well believe that it may be very advantageous to the silk grower, to do all he can towards developing the experiments already made in the culture of our American silk worm. We must not forget, however, that amongst our ornamental and forest trees the larva is capable of doing much harm, and in the present instance we can only regard it as a noxious insect, and therefore one to be destroyed. Like everything else in the insect world, it has its special enemies, being very subject to the attacks of an Ichneumon fly, named *Ophion Macrurum*. Hand picking is the only remedy we are aware of.

Fig. 32.



4. THE CECROPIA EMPEROR CATERPILLAR. (*Platysamia cecropia*, Linn.)

Order. Lepidoptera; Family Bombycidæ.

This insect was fully described by the Rev. Mr. Bethune, in his treatise on insects injurious to the Apple, contained in the Commissioner's Report for 1870, to which we refer our readers for further details. As the caterpillar feeds also on maple leaves we have given a figure of it, No. 33.

Fig. 33.

Colours--Green, blue, yellow and red.

Mr. Bethune well describes it as a giant among caterpillars. It is about four inches long when full grown. The colour of the body is pale green, and it is covered with tuber-

cles of green, blue, yellow and red colours. It spins a cocoon in a manner similar to *T. Polyphemus*, which it much resembles in its habits save that the cocoon remains attached to the trees. The larva is subject to the attacks of a parasitic *Tachina* fly. Mr. Bethune states that the most effective remedy is to go round the orchard or garden in the winter, and cut off the cocoons which are so large and conspicuous as to be at once seen.

5. THE MAPLE OWLET MOTH. (*Apatela Americana*, Harr.)

Order, LEPIDOPTERA; Family, NOCTUIDÆ.

During the later portion of the summer months and early in the fall, the caterpillar of the owlet moth may often be met with. It is about three inches long at maturity, the upper side of the body is greenish-yellow, and covered with long soft yellow hairs, with four long slender erect tufts of black hairs, two on the fourth and two on the sixth segments, and a long single tuft on the eleventh segment; the head, last segment, and all the under side, including the feet, are black. During repose it remains curled up sidewise. Dr. Harris writes that "when about to make its cocoon, it creeps into chinks of the bark or into cracks of fences and spins a loose half-oval web of silk, intermixed with the hairs of its body; under this it then makes another and tougher pod of silk, thickened with fragments of bark and wood, and there when its work is done changes into a chrysalis, in which state it remains till the following summer." The perfect moth expands about three inches. The fore wings are light gray—near the outer margin there is a wavy scalloped whitish line, edged with black, and there are various black lines and streaks edged in the same way; as are also the reniform or kidney shaped spots in the middle of the wing. The outer edge of both fore and hinder wings is fringed with wavy black and white spots. The hind wings are of a rather darker shade of gray in the males, while those of the female are more dingy or reddish brown. All the wings are whitish and shining on the under side, with a black wavy curved band and a central semi-circular spot on each, the fringes are the same colour as on the upper side. The body is reddish brown above, and much lighter in colour on the under side. The four wings have the peculiar mark resembling the Greek letter "ψ," though not so distinctly as in "Acronycta Psi," whose history we related in the report for 1870, when treating of the plum. The Thorax is very thick, with prominent collar and shoulders.

The family name of this moth is given to it from its nocturnal habits, having been named by the great entomologist Linnæus from "*Noctua*," the Latin word for an owl. The maple owlet is the largest of our American species. It is very similar to, and has sometimes been mistaken for *Apatela Aceris*, the maple moth of Europe, although the larvæ do not bear any resemblance to each other.

6. THE BANDED MAPLE MOTH (*Ophiusa bistriaris*, Hubner.)

Order, LEPIDOPTERA; Family, NOCTUIDÆ.

It is somewhat hard to believe that this elegant little moth can be the cause of any mischief to our maples, but we must not be deceived by appearances, for it is a veritable enemy.

The moth expands about one inch and three-quarters. The wings are large, and clearly and neatly shaped. The colour of the forewings is a rich chocolate brown, with a broad lighter margin on the outer edge, with a wavy scalloped line dividing it lengthways; there are two whitish lines edged on the inner side with a deeper shade of chocolate brown, the outer of these two lines forms the inner side of the marginal broad border; the hindwings are of a uniform reddish brown, with two indistinct transverse lines and bordered with a whitish fringe, margined interiorly with a scalloped black line. The under side of all the wings is of a light brown colour, with a black wavy transverse line and a central black spot in each wing, and a broad whitish border with blackish scalloped margin, and a fringe; the body is the same colour above as the fore wings; the head is thickly clothed with deeper red collar; the feelers are erect and prominent.

The larva has been bred by Mr. William Saunders from the Silver Maple, *Acer*

dasycarpum, and we give the following condensed description from his notes published in the *Canadian Entomologist*, vol. ii. p. 130.

A number of specimens were taken late in July. Their length was 1·40 inches; somewhat onisciform. The head was medium sized, flattened and bilobed; of a pale, ashen gray colour, a dark brown stripe on each side, and a few short grey hairs scattered on its surface.

The body above is brownish grey, with numerous streaks and dots of pale brown; a double irregular dorsal line widening here and there throughout its entire length. There are many other broken lines of the same character, composed chiefly of dots, but none of them continuous. On the hinder part of the twelfth segment is a raised crescent shaped line, edged behind with black, and on the terminal one two whitish dots, with a small patch of black at their base. The spiracles, or breathing pores, are pale, oval, and edged with black. The under surface is paler and bluish-green, with two round central blackish spots on the hinder part of the seventh and eighth segments. The feet are greenish, and semi-transparent. This larva is subject to considerable variation in its colour and markings. When about to go into chrysalis the larva cuts through a portion of a leaf of the tree on which it has fed, and turning it over constructs a snug little case, fastening it up closely and carefully with silken threads, and in this completes its transformations. After remaining in the pupa state about two weeks Mr. Saunders' specimens produced the perfect imago.

Although not appearing in any very great numbers the moth is tolerably common in the western part of the Province.

7. THE MAPLE LEAF CUTTER (*Ornix acerifoliella*, Fitch.)

Order, LEPIDOPTERA; Family, TINEIDÆ.

Many persons, we have no doubt, have often noticed a peculiar appearance of the maple leaves, resembling the effects of fire or frost, and giving a dingy brown look to the whole foliage. It is more or less common every year in this Province, but it has been unusually noticeable in the London district during the past season. It is caused by the larvæ of a pretty little moth, whose dark brilliant blue colour and bright orange yellow head may frequently attract the attention of an observer during the early part of the summer, as the moth flies about from tree to tree, or rests exposed upon the leaves.

This little creature belongs to a family that embraces the smallest in size of all our *Lepidoptera*, and many members of which are very familiar to us, as we know to our annoyance and discomfort when our furs and carpets and wearing apparel are attacked. Dr. Asa Fitch, the talented Entomologist of the State of Massachusetts, was the first to work out the life-history of this destructive little maple leaf cutter, and from his excellent treatise, published in 1856, we intend to make a few extracts. "The cause of this fading of the leaves was recently discovered upon examination. It was found that the green parenchyma or pulpy substance of the leaf was destroyed in spots and irregular patches, leaving only the fine net-work of veins and the transparent cuticle. These spots were commonly in rings or in segments of a circle, with the centres green and unaffected. In addition to these, holes of a nearly circular form appeared in the leaves, about a quarter of an inch in diameter, with others of a smaller size. A dozen or more of these holes were at that time found in almost every leaf; and some of the pieces which had been cut out of the leaf, forming these holes, might be observed adhering like round scales to the surface of the leaf, some on its upper, others on its under side. On elevating this scale from the surface of the leaf another smaller one was found beneath it, and beneath them was a small white worm, which was evidently the artizan by whom all this work had been done—cutting out these circular pieces from the leaf to form a cloak for himself, and when hungry feeding upon the pulpy substance of the leaf, thus forming the circular and irregular spots seen upon it. Occasionally one of these scales might be observed to move slightly along, the worm at such times protruding its head from under the edge of the scale, and with its feet pulling its unwieldy domicile to another part of the leaf."

"The worm within these cases is nearly a quarter of an inch in length when mature. It is slender, and of a flattened cylindrical form, soft and contractible, composed of

thirteen segments marked by slight intervening constrictions. It is dull white, the head, which is strongly depressed, and the three thoracic segments pale rusty brown. An interrupted broad blackish stripe along the middle of the back is more or less distinct. Only the three pairs of legs upon the thoracic segments are distinctly developed."

"These worms, or many of them at least, are carried to the ground upon the leaves, when they fall from the trees in autumn. They remain in their cases and change to pupæ among the fallen leaves beneath the trees, in which situation they may be found early in the following spring."

Dr. Fitch mentions the fact that trees standing alone in fields or yards around houses were exempt from the attacks of the leaf-cutter. Our experience does not confirm this statement, for we found that several isolated trees were badly disfigured around the country house where we spent the past summer months. A small Ichneumon-fly, about one-tenth of an inch in length, and pale yellow, is parasitic upon the larvæ cases, and probably is of material service in checking the increase of the moth. Dr. Fitch suggests as a remedy that sheep or cattle be allowed to range the ground occupied by the sugar orchard, and if notwithstanding the trampling of the earth by cattle standing under or travelling around them, the leaves of particular trees show that they are preyed on by this moth, it will be well after the leaves have fallen in autumn to feed salt to the animals under such trees, that any insects among the leaves may be trampled upon and destroyed.

The holes made by these insects are nearly circular when first cut, but by the subsequent growth of the leaf they become oblong.

8. THE MAPLE MEASURING WORM (*Stegania pustularia*. Guenee).

Order, LEPIDOPTERA; Family, GEOMETRIDÆ.

We quote the following account from Mr. W. Saunders' notes, as published in the *Canadian Entomologist*, vol. iii. p. 325:

"The larvæ of this delicate looking little geometric moth feeds on the maple. It is common in the London neighbourhood, and may be readily got in season by striking the branches of the trees a sharp blow, when it drops at once part way to the ground, remaining suspended by a silken thread, by means of which, when danger passes, it can regain its position on the tree. It is found full grown about the middle of June, enters the chrysalis state within a few days afterwards, and produces the moth early in July.

"When full grown the larva measures about five-eighths of an inch in length; body cylindrical, head medium-sized, rather flat in front and slightly bilobed, and of a pale green colour, with a few very fine hairs, invisible without a magnifying glass, scattered over its surface; mandibles tipped with black."

"Body above bluish green, with thickly set longitudinal stripes of whitish and yellow; a double whitish dorsal line with bordering lines of yellowish white, neither of which are unbroken, but are formed of a succession of short lines and dots. Below these, on each side, are two or three imperfect white lines, made up of short streaks, and much fainter than those bordering the dorsal line; spaces between the segments yellowish. The skin all over the body is much wrinkled and folded."

"The under surface is green, with a tinge of yellowish between the segments; feet yellowish green, prolegs green, faintly tipped with brown."

"The moth is of a pure white colour, with three or four reddish brown spots on the costal margin of each of the fore wings, and with a faint curved line of the same, crossing them a little beyond the middle; it expands one inch."

The larva feeds on the young and tender leaflets and buds, and of course causes some injury. In all probability the same remedy would be of service as that suggested by Dr. Fitch in the case of the maple leaf cutter.

INSECTS AFFECTING THE PEACH.

By E. B. Reed, London, Ont.

THE PEACH BORER (*Ægeria exitiosa*, Say.)

Order, Lepidoptera; Family, Ægeridæ.

This notorious pest, which has been well termed "the silent and insidious destroyer of the peach tree," is so common, and its attacks are so universal wherever peach-culture is attempted, that we deem it matter of interest to our readers to lay before them the full details of its history. The laborious researches of those able American Entomologists, Mr. Thomas Say, of Philadelphia, Dr. Thaddeus Harris, of Massachusetts, and Dr. Asa Fitch, of New York, have caused the whole history of the peach borer to be well worked up, and it is from their writings that we propose to condense the following treatise for the benefit of our Canadian readers.

Mr. Say first described the insect in 1826, and gave it the name of *exitiosa*, a word signifying "destructive," in allusion to its powers of mischief. The perfect insect belongs to a group or family of moths, which, from their transparent wings and slender bodies with coloured bands, bear so strong a resemblance to certain bees, wasps, hornets and flies that various species have received the names of *apiformis*, the bee-shaped; *vespiformis*, the wasp-shaped; *crabroniformis*, the hornet-shaped; *tipuliformis*, the gnat-shaped, etc. So deceptive is this likeness that even the celebrated naturalist, DeGeer, in writing of one of the species observes, "the first time that I saw it I hesitated to take it with my naked hand, believing that I had found a wasp." The moths fly only in the day time, and they may be frequently seen basking in the sunshine. Their larvæ derive all their nourishment from the wood and pith of the various shrubs and trees which they affect, and in the stems or roots of which they lie concealed.

Fig. 34.

Colours Steel Blue and Yellow Band.

At figure 34 we give a representation of of the perfect or winged state of the peach borer, No. 1 showing the female and No. 2 the male, by which our readers will notice that the sexes differ so remarkably in appearance that it is difficult to believe that they both belong to the same species. The male, No. 2, is of a deep steel blue colour, with various pale yellow marks, and has a glossy satin-like lustre. The antennæ are black, and fringed on the inner side with numerous fine short hairs. The palpi, or feelers, the shoulder-covers, the rings of the abdomen, and of the peculiar brush or fan on the tail are edged with pale yellow. The wings expand about one inch; they are all transparent and glass-like, with a slight tinge of smoky yellow, their veins, margin and fringe are steel blue. The body is slender and cylindrical. The feet are black, with two rings of pale yellow on the shins.

The female, No. 1, has a very dark steel blue body, with a tinge of purple, and a broad band of a bright glossy orange-yellow colour, occupying the whole of the fourth and fifth segments. The abdomen is of a long oval form, nearly twice as broad as that of the male. The antennæ have no fringe along their inner sides. The fore wings are opaque, and of a steel blue colour, with the tips and fringes of a purplish tint. The hind wings are transparent like those of the male; they are broadly margined upon both

sides, and marked at the base with steel blue; they have five thick veins, and commonly there are traces of a straw-yellow stripe on the outer margin towards the tip. The wings expand about one inch and a half. Both sexes have several varieties, but the two above mentioned descriptions are those of the ordinary types.

The eggs are deposited by the moths in the course of the summer, upon the trunk of the tree near the root. Mr. Evan Thomas, as quoted by Mr. Say, says that "they leave from one to fifty, and in some instances nearly three hundred eggs in each tree, according to its size and capacity to support the future progeny. These soon appear, but it is difficult to detect them until they have acquired a growth of two or three weeks, when they are four or five lines in length. From this period their growth is accelerated or retarded in proportion to the quantity of nourishment afforded."

Dr. Fitch writes "that the worms when hatched work downwards, at first in the bark of the root, forming, a slender flexuous channel, which becomes filled with gum. At the distance of an inch or two below the surface the whole of the bark of the root becomes consumed in badly infested trees, and the soft sap wood is also extensively gnawed and eroded, so that frequently the root is nearly severed. The larger worms in the winter season repose with their heads upwards, in contact with the exterior surface of the root, commonly in smooth longitudinal grooves which they have excavated, their backs being covered over with the castings mingled with the gum and with cobweb-like threads, thus forming a kind of cell, the cavity of which is considerably larger than the body of the worm inhabiting it. The smaller worms have no such cell, but lie promiscuously in the gum, or between it and the root."

The presence of these borers may always be readily detected by the castings and gum which issue from the hole in the bark.

Dr. Harris tells us "that these borers, when nearly one year old, make their cocoons either under the bark of the trunk or root, or in the earth and gum contiguous to the base of the trees. Soon afterwards they are transformed to chrysalides, and finally come forth in the winged state, and lay the eggs for another generation of borers."

"The last transformation takes place from June to October, most frequently, however during the month of July in the State of Massachusetts. Here, although there are several broods produced by a succession of hatches, there is but one rotation of metamorphoses consummated within a year. Hence, borers of all sizes will be found in the trees throughout the year, although it seems necessary that all of them, whether more or less advanced, should pass through one winter before they appear in the winged state."

Dr. Fitch also confirms the statement that whoever examines infested roots will find worms upon them of all sizes, at all times of the year. From his report it appears that the pupa state lasts at least three weeks in the warmest part of the summer, and that in the State of New York the moths generally deposit their eggs about the end of July and the beginning of August. At fig. 35 we give a faithful representation of the full grown larva, and we quote its description as given by Mr. Saunders in the *Canadian Entomologist*, vol. iii.

Fig. 35.

The larva is a naked, soft cylindrical grub, slightly flattened on its under side, and measures when full grown over half an inch in length, and nearly a quarter of an inch in diameter. It is divided into fourteen nearly equal segments by broad transverse constrictions.

The head is of a medium size, with a depressed line down the centre, dividing it into two lobes. It has a triangular piece inserted in the middle, with its base towards the mouth and its apex terminating just under the anterior edge of the second segment. The head is also flattened, and of a reddish colour, becoming darker, almost black, on its anterior edge. The jaws are black and prominent. The body above is of a dull pale yellow, with the segments or rings of the body deeply cut. The second segment is of a pale reddish brown colour, smooth and horny looking. On each segment there are a few minute pale reddish dots, from which arise short reddish or brownish hairs—those along the sides and on the posterior extremity being somewhat larger. A faint line runs along each side through the stigmata or breathing pores of a paler shade than the rest of the body. The stigmata are small, nearly round, and of a dull reddish colour. The under surface is very similar in colour to the upper. The feet are tipped

with reddish brown, and the prolegs are pale yellow, with the fringe of hooks crowning each, of a dark reddish brown.

From Dr. Fitch we learn that "when ready to enter the pupa state the worm crawls upwards to the surface of the ground, and there forms for itself a follicle or pod-like case of a leathery texture, made from its castings, held together by dry gum and cobweb-like threads. This follicle is of a brown colour, and oval in its form, with its ends rounded; it is about three-fourths of an inch long, and over one fourth in diameter, but is variable in its size, being sometimes but half an inch long. Its inner surface is perfectly smooth, and of the colour of tanned leather, It is placed against the side of the root, often sunk in a groove, which the worm appears to have gnawed for this purpose, with its upper end slightly protruding above the surface of the ground. But if the earth has been stirred recently, so as to lie loose around the root, the worm will commonly form its follicle an inch or more below the surface."

A great variety of remedies have been proposed by the numerous writers who have treated upon this insect, but we think that the following extracts will give the results of those experiments that appear to have met with the best success.

Dr. Harris informs us "that the following plan, which was recommended by me in the year 1826, and has been tried with complete success by several persons in this vicinity, will effectually protect the neck or most vital part of the tree from injury. Remove the earth from the base of the tree, crush and destroy the cocoons and borers which may be found in it and under the bark, cover the wounded parts with the common clay composition, and surround the trunk with a strip of sheathing-paper eight or nine inches wide, which should extend two inches below the level of the soil, and be secured with strings of matting above. Fresh mortar should then be placed around the root, so as to confine the paper and prevent access beneath it, and the remaining cavity may be filled with new or unexhausted loam. This operation should be performed in the spring, or in the month of June. In the winter the string may be removed, and in the following spring the trees should again be examined for any borers that may have escaped search before, and the protecting application should be renewed."

Mr. James Worth, who is largely quoted by Mr. Thomas Say, writes: "The best plan of guarding against the ravages of this insect which I have found, is to examine the tree early in the month of July; take a bricklayer's trowel, and opening the ground around the trunk the lodgment of the insect will at once be discovered by the appearance of gum, and it can be readily destroyed. One person can thus examine more than a hundred trees in less than half a day, and very few, if any, of the insects will escape."

Mr. C. V. Riley, the State Entomologist of Missouri, in his first annual report published in 1869, gives yet another remedy, and one which appears to be so successful that we cannot refrain from giving our readers the full extract. "I have had ample occasion," he writes, "to witness the effect of the mounding system during the summer in several different orchards, and am fully convinced that it is the best practical method of preventing the attacks of this insect, and that it matters little whether ashes or simple earth be used for the mound. True, there are parties who claim that the almost total exemption from borers in mounded peach-orchards is due, not to any special effect produced by the mound, but to the general rarity of the insect. But I have found no general rarity of the insect wherever I have been in our own State, but, on the contrary, have with difficulty found a single tree in any orchard that was in anywise neglected that did not contain borers; while I have found mounded trees entirely exempt. The following paragragh communicated to the *Western Rural* by Mr. B. Pullen, of Centralia, Illinois, touches on this point, and I can bear witness to the thrift and vigour of Mr. P.'s trees:

"As spring will soon be upon us, I wish to add my testimony in favour of the "banking system," as a preventive against the attacks of the peach borer. As to its efficiency there can be no doubt, I have practised it for four years with complete success. I would not advise its adoption until after the trees are four years old. During most of this period the bark is tender and trees are liable to be entirely girdled by even a single worm. Safety lies only in personal examination and removal with the knife in fall and spring (September and April). In April of the fourth year bank up to the height of from ten to twelve inches, pressing the dirt firmly around the tree. A little dirt should be added each successive spring; it is not only a preventive, but a great saving of labour."

As further testimony, and with a view of giving the method by which the trees may be mounded, I also insert the following communication from E. A. Thompson, of Hillside (near Cincinnati), Ohio, which appeared in the *Journal of Agriculture* of November 14th, 1868:

"The mounding system was first practised, so far as I know, by Isaac Bolmar, of Warren County, Ohio. I visited his orchards some years ago, acquainted myself with his system, and concluded to try it upon my orchard of 4,000 trees—then one year planted. I plant my trees in the fall, and in the spring following cut them back to six inches above the bud. The tree, then, instead of having one body has several—from three to six. The second summer I plough both ways, turning the furrows towards the trees. The men follow with shovels, throwing the loose soil around the trees to the height of about one foot. In the fall I cut the trees back, taking off about one-third of the year's growth. The next spring or summer I pursue the same method, raising the mound about one foot higher, cut back in the fall, and in the third summer repeat the process, raising the mound another foot, which finishes the job. The mound will then be about three feet high at its apex, and six feet in diameter at its base. The mounding need not be done in the summer or at any particular season; it is just as well done in the fall when the hurry is over. The dirt is never taken away from the trees; in fact it cannot be removed without injury to the tree, for the young rootlets each year keep climbing up through this mound. I had occasion to remove one of these mounds a few days since, and found it a mass of healthy roots."

"Now for the benefits. First, you have no trouble with the grub or borer; he must have light and air, and the mound is too much for him; he comes out, and that is the last of him. I have never wormed my trees or hunted for borers, and an orchard of healthier or thriftier trees cannot be found. It has been asserted that the borer will reappear again near the top of the mound—but I am satisfied this is not the case; I have never thus far been able to find one. Second, the system imparts longevity to the tree. I saw a tree in Warren County, treated in this manner, *thirty* years old, still healthy and bearing annual crops. Third, trees thus treated are not subject to disease. I have never had a case of *yellows* in my orchard. Fourth, the expense is trifling—one man can mound fifty trees per day. The system can be applied to old as well as young orchards; but if old trees are thus treated they should first be severely cut back, when they will make a growth of young wood."

It is also stated that tobacco stems thrown round the stem of the trees have been productive of good, as they seem to have the effect of keeping away the moth.

INSECTS INJURIOUS TO THE POTATO.

By E. B. Reed, London, Ontario.

Addenda to the Report of 1870.

Fig. 36.

Colours—(a) deep orange; (b) and (c) venetian red, inclining to cream colour; (d) and (e) cream colour and black.

During the past year we looked forward with considerable anxiety to the effect that the Colorado Beetle would produce on the potato crop; we are glad to be able to report that on the whole, less mischief has been done than we anticipated. It is somewhat difficult, however, to arrive at an accurate estimate. The Bureau of Agriculture forwards every year to the Secretaries of the Electoral Division Agricultural Societies a printed circular requesting a detailed return of the crops in each district, if these returns were properly made they would afford much valuable information. It is to be regretted that they are not more universally attended to. So far as we can learn only 40 of these returns have been made for 1872, and it is on these partial details that we must base our analysis for the Potato crop. While, however, the ravages of the beetle have been somewhat less than we expected, its increase in numbers and onward progress have yet been such as to cause not only a material effect on the crop, but also to maintain a good deal of alarm amongst the farming community. A comparison of the crop returns for the two past years fully confirms the statement made in our former reports, tbat the second and third years of appearance of the beetle are worse than the first.

A few statistics may not be out of place here.

In 1871, 45 Agricultural Societies sent in returns shewing an average crop of 131 bushels per acre.

In the past year, 1872, only 40 Societies reported, with an average of 118 bushels per acre.

In 1871 only 14 Societies reported the presence of the beetle, while 33 were free from it, and none badly affected.

In 1872, 26 Societies report injury from the beetle, and 8 report very serious damage, in some cases almost total destruction, and only 14 appear to be free.

It is to be noticed that all the western places which in 1871 were the most badly affected, were in 1872 far more seriously attacked. In no one place do we find that the beetle after making its appearance one year, has not reappeared in the following season. The following list of Societies reporting the advent of the beetle for the first time, will shew what its onward progress is:—

Middlesex, N.	Hastings, E.	Perth, S.	Norfolk, N.
Durham, W.	Northumberland, W.	Simcoe, S.	Wellington, S.
Wellington, N.	Middlesex, W.	Niagara,	Grey, S.
Frontenac,	Peterborough,	Victoria,	Oxford, N.
Hastings, N.			

While the following were those receiving most injury:—

Bothwell,	Essex,	Middlesex, E.	Wellington, N.
Lambton,	Perth, S.	Elgin, E.	

We are quite aware of the inaccuracy of these statistics, as we know that in some of the new places the beetle appeared in 1871. We base the statements, however, upon the returns given to the Commissioner. It would be very desirable to obtain statistics of the various sorts of potatoes grown, as we are quite satisfied from our own experience that some varieties are much more subject to attack than others, and we would beg respectfully to suggest to the Commissioner of Agriculture the propriety of obtaining such information during the coming season.

From the monthly reports of the Agricultural Department published at Washington, we obtain some information respecting the ravages of the Colorado Potato Beetle in the United States.

The returns of their correspondents shew that the crop of 1872 was less than that of 1871 by about six millions of bushels. This, however, comprehends "sweet potatoes" as well. The western States, in which the potato crop had suffered for several years past from the ravages of the Colorado beetle, reported diminishing losses from that cause, and were the only States, North Carolina and Texas excepted, reporting increased production.

In the following twelve Western States, viz., Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Nebraska, Missouri, Kansas, California, and Oregon, the average yield was only 98 bushels to the acre, while the average price on December 1, 1872, was 50 cents per bushel.

Harding County, Iowa, is reported exempt, after several years' visitation of the beetle "Tyck's Seedling" Potato is claimed to be "bug proof."

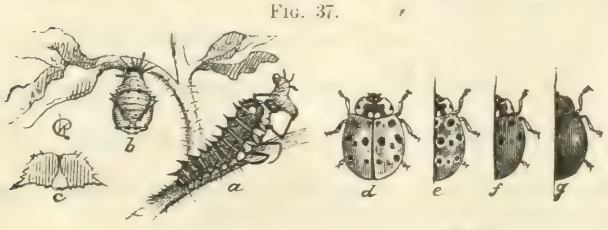
We give these statistics as it is from the Western States that the Colorado Beetle has worked its way, and they shew to some extent what effect has been produced by its ravages for some years past.

In our immediate neighbourhood at London the beetles literally swarmed, and thousands were daily trodden down on the sidewalks and streets, and we look for a still further increase next year. We may mention as a curious fact, that although we had previously seen many hundreds of thousands of the perfect beetle, it was only last season that we for the first time saw even one in actual flight; but perhaps the numbers we saw this year on the wing fully compensated for the "masterly inactivity" of those formerly observed by us.

Our natural allies the insect enemies of the Colorado Beetle appear to be slightly on the increase, thus furnishing further evidence, if any is required, that Dame Nature still maintains the "balance of power," and that for every natural evil that arises, some natural remedy is sure to be found; and although the remedy perhaps may not, in our estimation, work quite so rapidly as we could desire, yet it is none the less sure and effectual in the end.

Especially have we noticed the more frequent presence of the Fifteen Spotted Ladybird (*Mysia 15 punctata*, Oliv.)—see Fig. 37—and several friends have brought us in specimens of *Perillus circumcinctus*, Say—see Fig. 38—which they detected in the act of attacking the larvæ of the Colorado beetle.

Fig. 37.



We still continue to recommend Paris Green as the chief

remedy. Wherever it has been properly used, good results have invariably been obtained. It is, of course, of the utmost importance that the quality should be good. As a marketable commodity, the quality of Paris Green is exceedingly variable. It is an arsenite of copper, and the best qualities contain about 60 per cent. of arsenic, on which its activity depends, but the inferior grades contain a much smaller percentage, and are consequently much less effective, and in some cases almost worthless for this purpose. We are satisfied that every reported case of failure in the use of Paris Green as a remedy for the Colorado potato beetle, may be traced directly to the inferior quality of the poison used. We have been informed by Mr. W. Saunders, of London, Ont., that he has found Plaster of Paris a most excellent substitute for flour to mix the poison with. It should, most certainly, be very useful as a fertilizer, and where available, would doubtless be found to obtain success. Its cheapness also is a very important point in its favour. Its proportions for mixture are somewhat more, owing to the difference between the weight of the plaster and that of flour, for while the latter works well in the ratio of from 15 to 20 parts to 1 of Paris Green, the Plaster will require at least 30 to 40. Flour, however, we consider for several reasons to be still a capital material for this purpose.

Fig. 38.

There is a mixture prepared at Strathroy, Ont., which it is claimed is a very good remedy for the beetle. We tried some on a small scale, but not enough to justify us in recommending it as a substitute for the Paris Green. We purpose testing it more extensively this next season.

In the State of Illinois we are told that the following plan has been tried and found to succeed, *i.e.*, to plough a small furrow between the rows of potatoes, knock off with a stick all the larvæ into the furrows, and then by running the plough up the row again cover them with earth.

We can hardly imagine that in our climate this would answer at all, for as the larvæ when full grown seek the earth in which to undergo their transformation into the pupal and perfect states, it would seem that this plan would only kill a few of the tenderest and youngest of the brood, and would not interfere with the older and more mature ones.

From the general returns, the early crops appear to escape the more easily, and in several instances the late crops seem to have been saved by a plentiful supply of rain, even after the bugs had attacked and finally left them.

The chief thing, however, seems to be not to grow too large a crop, and to exercise a vigilant watch over what is grown; this, with hand picking and the use of Paris Green will, we think, ensure success in most instances.

We have not heard of a single case of poisoning from the bite or handling of the beetle. As to our opinion on this point, we refer our readers to our Report for 1871.

We would beg here to record our thanks to our esteemed friend, Professor Geo. Buckland, the able and well-known Secretary of the Ontario Bureau of Agriculture, for his courtesy in furnishing us with statistics of the past year's crop; the Entomologists of Ontario indeed owe a great deal to the Professor for his invariable kindness and attention to their wants, and the promptitude with which he always seeks to assist them in carrying out their attempts at Practical Entomology. We feel sure that we express the feeling of all the members of the Entomological Society of Ontario, in offering to our friend all the kindly wishes of this Christmas season, and trusting that he may long be spared to superintend the working of the Bureau with which he has been so long and so honourably associated.

ON SOME INNOXIOUS INSECTS

By W. Saunders, London, Ontario.

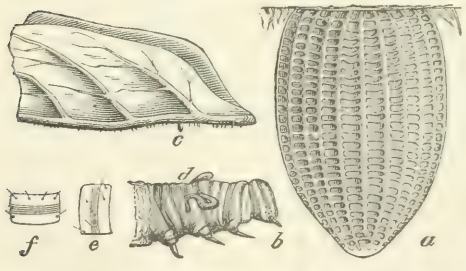
Under the above heading it is proposed to give our readers the life history of several of our more common insects, which are neither injurious nor beneficial to the farmer or fruit gorower, but which from their great abundance, or else from some peculiarity in their appearance, habits or size, excite curiosity and claim our attention.

The Archippus Butterfly (*Danais Archippus*, Fabr.)

The first insect of which we propose to treat is one of our commonest butterflies, known as the Archippus Butterfly (*Danais Archippus.*) Its first appearance on the wing is usually about the middle of May, but it is not very common until later in the season. It is said that it passes the winter in a state of torpidity, hidden in some sheltered spot where it sleeps securely till awakened by the warmth of spring. The few individuals which thus early appear, lay their eggs on the tender leaves of the young milkweed plants (*Asclepias cornuti*) and other species of Asclepias, and also on the bitter root (*apocynum Androsæmefolium*); this takes place during the latter part of May or the beginning of June.

The eggs when first laid are white, but in two or three days they become yellow, and hen dull grey just before the time of hatching. They are $\frac{1}{25}$th of an inch long, conical in form, flattened at the base. When viewed with a magnifying glass they appear very beautiful, (see figure 39) where *a* represents the egg much enlarged, while at *c* it is shown of the natural size, and in its usual position on the under side of the leaf. On each egg there are about twenty-five raised longitudinale lines or ribs, and about the same number of prosslines between each, so that the whole apwears covered with a regular and beautiful network as shown in the figure, which has been drawn from nature, as those also have which are to follow by our esteemed friend, Prof. C. V. Riley, of St. Louis, Mo. In about six or seven days the egg matures, producing a very small caterpillar, one tenth of an inch long, with a large black head and yellowish white body, with a few black hairs on each segment or ring, as shown at *e* and *f* (Fig 39.) This caterpillar grows very rapidly, and soon finds that its skin, although very elastic, will bear no further stretching, when it conveniently disrobes itself and appears in colours fresh and gay, by simply crawling out of its skin through a rent down the back, which takes place just at the proper time. This process, which is called moulting, is repeated three times during the growth of the larva, and requires no other preparation for its accomplishment than that of a short fast. Any abstemiousness shown at these critical periods in the creature's history is however soon compensated for by the enormous appetite with which it is furnished as soon as the crisis is past. At *h* (Fig. 39) the head and anterior segments of the larva just before its last moult, is figured for the purpose

Fig. 39.



of showing how the long fleshy horns with which the mature caterpillar is furnished are conveniently coiled up while lying buried beneath the old skin.

Fig. 40.

Colours—White, Black and Yellow.

The full grown larva (Fig. 40) is about one and three-quarter inches long. Its head is yellowish, with a triangular black stripe in front below, and another of a similar shape above.

The upper surface of the body is beautifully ornamented with transverse stripes of black, yellow and white, the white covering the greater part of each segment, and having a wide black stripe down the centre, while the yellow occupies the spaces between. On the third segment (reckoning the head as first) are two long black fleshy horns, and on the twelfth two others of a similar character, but shorter, and not quite so stout.

The underside is black, with a greenish flesh-colour between most of the segments.

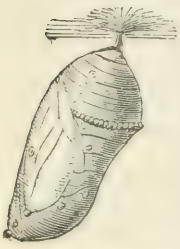
The next change which comes over this caterpillar is that which transforms it to a pupa or chrysalis, a most astonishing transformation, when the voracious larva becomes for a time torpid, senseless, and almost motionless, while preparing for that change when it is to appear in brilliant plumage and gracefully float and flutter through the air, enjoying the summer's sunshine and sipping the nectar of flowers. Kirby in his "Introduction to Entomology" says, "were a naturalist to announce to the world the discovery of an animal which for the first five years of its life existed in the form of a serpent, which then penetrating into the earth and weaving a shroud of pure silk of the finest texture, contracted itself within this covering into a body without external mouth or limbs, and resembling more than anything else an Egyptian mummy; and which, lastly, after remaining in this state without food and without motion for three years longer, should at the end of that period burst its silken cerements, struggle through its earthly covering, and start into day a winged bird—what think you would be the sensation excited by this strange piece of intelligence? After the first doubts of its truth were dispelled, what astonishment would succeed! Amongst the learned what surmises! what investigations! Amongst the vulgar what eager curiosity and amazement! All would be interested in the history of such an unheard-of phenomenon." Yet the changes which the insect we are referring to undergoes in common with many others, is scarcely less wonderful or startling.

Fig 41.

In Fig. 41 the larva is represented as it appears at different periods during its transition to the state of chrysalis. At *a* it hangs suspended from a silken web in which its hind legs are entangled, and which has been previously attached by the caterpillar to the underside of a leaf, or fence rail, or some other secure place of retreat; and here, while hanging for about a day, the larva contracts its length and increases its bulk, especially on the anterior segments. By and by a rent takes place in the skin down the back, and the chrysalis begins to appear, and after long and persevering efforts in stretching, contracting, and wriggling the body, the skin is crowded backwards and worked nearly up to the hinder extremity, as shown at *b*; and now a difficulty presents itself, and a feat has to be performed to imitate which would puzzle the most daring acrobat, for without hands or feet to hold on by, it has to withdraw itself from the remnants of its larva skin, and hang itself up by a black protuberance crowned with a bunch of hooks at the extremity of the chrysalis. Although this feat is so wonderfully difficult, it is very seldom indeed that a failure occurs in its accomplishment. A ready explanation of the means by which this is done is given at *c*, Fig. 41.) The joints of the abdomen being freely moveable, are first stretched against a portion of the larva skin, and by a sudden jerk backwards the skin is grasped and firmly held while the terminal segments are

withdrawn and the process of suspension completed. Soon after this the chrysalis begins a series of wriggling and jerking movements with the view of dislodging the empty larva skin after the removal of which it remains motionless unless disturbed, and becomes gradualy, harder and more contracted until it assumes the appearance represented by Fig. 42.

Fig. 42.



Colours—Green and Gold.

The chrysalis is about an inch long, and of a beautiful pale green colour spotted with gold, and with a band of golden dots extending more than half way round the body above the middle; this band is shaded with black. There is also a patch of black around the base of the black protuberance by which it is suspended, and several dots of the same on other portions of the surface. The chrysalis state seldom lasts more than ten or twelve days, and towards the expiration of this period the handsome green and gold colours begin to fade, and the chrysalis grows gradually darker until the diminutive wings of the future butterfly show plainly through the semi-transparent enclosure. The escape of the imprisoned insect, now nearly ready for flight, is usually made quite early in the morning. We have several times watched for their deliverance, and have usually found it to take place soon after daybreak. A sudden crackling and slight tearing sound is heard, which arises from a splitting of the chrysalis case part way down the back; the fore legs, head and antennæ are first withdrawn, and in a very short time the entire insect is liberated. Strange looking creatures they are when they first present themselves to view, with bodies so large as to be out of all proportion to the tiny wings. When fully developed their wings measure about four inches across, but when fresh from the chrysalis they are about the size of those of a large bee. The first necessity now for the welfare of the individual is to find a suitable location where the wings may be held in a good position for expanding, for without such favourable circumstance they would never attain a serviceable size. It is necessary that a position should be secured where the wings can hang down as they are expanding, for which reason the underside of a twig is often selected; and here, securely suspended by the sharp claws with which the feet are furnished, the wings undergo in a short time the most marvellous growth it is possible to imagine. We have seen the wings double their size by actual measurement within three minutes, and the whole process, from the time of the escape of the butterfly to that of the full development of the the wings, seldom occupies more than from fifteen to twenty minutes, and ere the sun is high in the heavens, on the morning of its birth, the soft flabby wings have dried and become rigid, and the butterfly is ready for flight.

A wing clipped from the insect immediately after its escape, and examined under the microscope, reveals the fact that the thousands and tens of thousands of scales with which the wings are covered, and which afterwards assume such beautiful feather-like forms, are now

Fig. 43.

Colours—Bright Orange, Red, Black and White.

nearly all linear or thread-like, not folded up or wrinkled, but undeveloped. Impressed with this thought, one is fairly astonished at the almost incredible change wrought in so limited a time, for the growth embraces not only the extension of the membranous surface of the

wing, but the enlargement and maturity of every scale or feather on it, the individuals of which appear but as particles of dust to the naked eye. What a wonderful and intricate system of circulation and power of nutrition must be possessed to accomplish this marvellous result.

The Archippus Butterfly (see Fig. 43) is so well known that it needs but little description to recall its appearance, especially where so good a figure is given. The ground colour of the wings when fresh is a beautifully bright orange red, the veins are heavy and black, and the margins are spotted with white, the latter being more or less covered or encroached upon by the general colour. Near the middle of the hind wings there appears in the figure, on one of the veins, an enlarged black streak or blotch, which, when closely examined, is found to be a small excrescence: as this is found only on the wings of the male, the sexes may be readily distinguished by this peculiarity.

We have frequently seen these butterflies in great numbers on pine trees which have been infested with aphis, attracted there no doubt by the sweet exudations which flow from the bodies of the aphis, thus interfering with the rights and privileges which have always been accorded to the industrious ant. They also have a fashion of congregating at times usually late in the season, in prodigious swarms, consisting of tens of thousands or hundreds of thousands of individuals. In September, 1871, we met with a swarm of this character, the particulars of which were communicated to the *Canadian Entomologist*, Volume 3, Page 156, as follows:—"On the first day of September while driving along the Lake Shore Road on the borders of Lake Erie, I was favoured with a sight which will not soon be forgotten. For several days previous *archippus* butterflies had been unusually abundant, and early in the morning on the day in question, some groups - numbering probably hundreds of individuals—which had rested during the night on trees adjoining the hotel at Port Stanley, were gyrating in a wild manner at all heights, some so high up that they appeared but as moving specks in the sky; others floating lower, over the tops of the trees in an apparently aimless manner. This was, however, as a mere skirmishing party when compared with the vast hosts seen a little later.

"It was about nine o'clock in the morning, when, passing a group of trees forming a rude semi-circle on the edge of a wood facing the lake, the leaves attracted attention, they seemed possessed of unusual motion and displayed all over fitful patches of brilliant red. On alighting, a nearer approach revealed the presence of vast numbers—I might safely say millions—of these butterflies, and they were clustering everywhere. I counted those on a small space, about the size of my two hands, on one of the trees, and there were thirty-two butterflies suspended on it, and the whole group of trees was hung in a similar manner. When disturbed they flew up in immense numbers, filling the air, and after floating about a short time gradually settled again. There appeared to be nothing on the trees to attract them, yet when undisturbed they seemed to prefer resting in quiet, as if enjoying the presence of congenial society. I regretted not having a net with me, as I should like to have captured a number of them, to have seen in what proportion the sexes were represented in the company. Their food plants—the various species of *Asclepias*—did not appear to be unusually common in that section. I apprehended that many of the individuals must have travelled some distance to be present at this gathering" No satisfactory reason has yet been assigned for such gatherings. The fact that the larvæ of the *archippus* is but seldom affected with parasites may partially account for their occasional abundance; we only know of one small ichneumon infesting them, and have but rarely met with this.

The Disippus Butterfly. (*Limenitis disippus*, Godt.)

This butterfly is also common, but not nearly so abundant as the species last described In the perfect, or winged state, it resembles the *archippus* butterfly very closely in colour, but it is smaller in size and may always be distinguished by the black band which crosses the hind wings, which is altogether wanting in the *archippus*.

The *disippus* butterfly is represented by Fig. 44. The ground colour of the wings is of the same warm orange red as the *archippus*; the veins also are heavy and black, and the wings along their margins spotted with white. In the figure the left wings represent

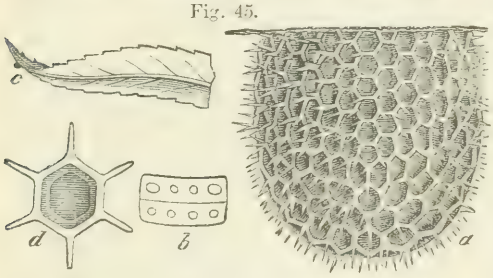
the upper surface, while those of the right, which are slightly detached from the body, show the under surface. The two surfaces differ but very little in colour and markings. It appears on the wing a little later in the summer than *archippus*, and deposits its eggs on the willow, which is its favourite food plant. Mr. Riley says that it feeds on the poplar and also on the plum. Although the *disippus* butterfly resembles the *archippus* so closely in the winged state, in the earlier periods of its history it is very dissimilar.

Fig. 44.

Colours, Orange, Red, Black and White.

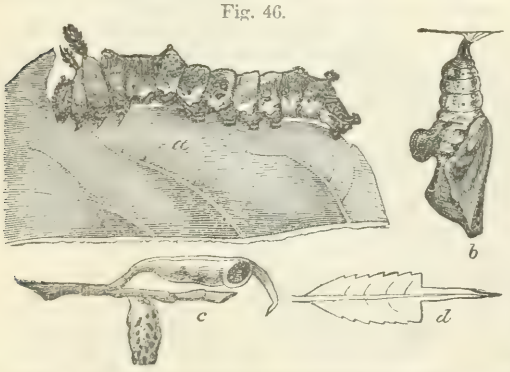
The egg is well represented by Fig. 45, and is a very beautiful and interesting object: *a* shows it highly magnified, while at *c* it is shown of natural size and in its natural position on the willow leaf. At *d* is represented one of the minute cells of the egg, very highly magnified, showing the little threadlike processes which proceed from each angle. Mr. Riley, who was the first to observe this egg, thus describes it in his "Third Annual Report," page 154. Length 0·38 inch. Diameter at base about the same. Globular, with top often slightly depressed Hexagonally reticulate, the cells more or less regular, sunken so as to give the egg a thimble-like pitted appearance, and about ten of them in the longitudinal row, and thirty in the circumference. Covered with translucent filamentouss pines, one arising from every reticulate angle and giving the egg a pubescent appearance. Each spine about as long as the cell is wide, those on the top being longest." He also says that the colour of the egg is at first pale yellow, but it soon becomes grey as the young larva within develops. These eggs are usually deposited singly near the tip of the leaf, generally on the underside, but sometimes on the upper side, and occasionally two or even three together.

Fig. 45.



The newly-hatched larva is nearly one-tenth of an inch long, with a large yellowish brown head. The body is pale yellowish brown with darker streaks, and with a few pale dots and warts, from which latter arise pale spines or bristles. In about a month from the time of hatching the larva becomes full grown, and appears as shown at *a*, Fig. 46, the following description of the mature larva was published by us in the *Can. Entomologist*, vol. 1, p. 94. Found feeding on willow, July 24th. Length one inch and a quarter. Head rather large, flattened in front, strongly bi-lobed, pale green, with two dull white lines down the front, and roughened with a number of small green and greenish-white tubercles. Each lobe is tipped with a green tubercle, or short horn.

Fig. 46.



The body above is dark rich green, with patches and streaks of dull white; the second segment is smaller than the head, and its surface covered with many whitish tubercles: the third segment dull whitish green, raised considerably above the second, with a flat ridge above, having a long brownish horn on each side of it, thickly covered with very short white and brown spines; fourth segment about the same as third, with the same kind of ridge above, with a small tubercle on each side, tipped with a bunch of short whitish spines; between the ridges on third and fourth segments are two small black dots above. Each segment from fifth to thir-

teenth inclusive, has two tubercles, one on each side, and in a line with the long horns on third segment, each crowned with a cluster of whitish spines; the tubercles on sixth and twelfth segments are much larger than the others those on the eleventh and terminal segments next in size, those on the ninth smallest. The tubercles on the seventh, eighth, tenth and eleventh segments have a streak of white at their base, and each segment behind fourth, excepting ninth, has several smaller tubercles of a bright blue colour. A large whitish patch covers nearly the whole of the ninth and parts of the eighth and tenth segments, and another of a similar character covers the second, third and part of the fourth. A white stripe extends along each side, close to the under surface, from the fifth segment to the end of the body, and in which is set a small cluster of whitish spines about the middle of each segment, from sixth to tenth inclusive. On each side of seventh, eighth and tenth segments is an elongated blackish spot, just above and behind the spiracles; the terminal segment has two dark greenish brown spots above in front of the tubercles. The spiracles are rather large, oval and brownish-black.

The under side is whitish-green, with a central dull white stripe on the hinder segments; the feet are brown, ringed with brownish-black; the prolegs pale greenish, faintly tipped with brown.

This caterpillar varies somewhat in colour, some specimens being of a paler green than that just described.

The chrysalis, Fig. 46, *b*, Mr. Riley describes as "marked with burnt umber, brown, ash grey, flesh-colour and silvery white, and is characterized, like that of the other species of the genus, by a curious, thin, almost circular projection, which has been likened to a Roman nose, growing out of the middle of its back."

There are two broods of this insect during the year; the larvæ resulting from the eggs deposited by the second brood usually attain to less than half their full growth before winter, when they hybernate and complete their growth the following spring. The interesting preparations made by these caterpillars in the construction of little cases, in which they rest tolerably secure from harm while in this state of torpor, is thus described by Mr. Riley "First and foremost—with wise forethought, and being well aware through its natural instincts that the leaf which it has selected for its house will fall to the ground when the cold weather sets in, unless it takes measures to prevent this—the larva fastens the stem of the leaf with silken cables securely to the twig from which it grows. It then gnaws off the blade of the leaf at its tip end, leaving little else but the mid-rib, as shown in Fig. 46, *d*. Finally, it rolls the remaining part of the blade of the leaf into a cylinder, sewing the edges together with silk. The basal portion of the cylinder is, of course, tapered to a point, as the edges of the leaf are merely drawn together, not overlapped; and invariably the lower side of the leaf forms the outside of the house, so as to have its projecting mid-rib out of the way of the larva, as it reposes snugly in the inside. The whole when finished (see Fig. 46, *c*,) has somewhat the appearance of the leaf of a miniature pitcher plant. These curious little cases may be commonly found upon our willows or poplars in winter time.

This insect is liable to the attacks of several parasites, which effectually prevent its increase beyond certain limits. One of these parasites is a tiny dark four-winged fly, which infests the eggs of the *disippus* butterfly; another is a very small black four-winged fly; and a third a larger two-winged fly, both of which attack the insect in its caterpillar state.

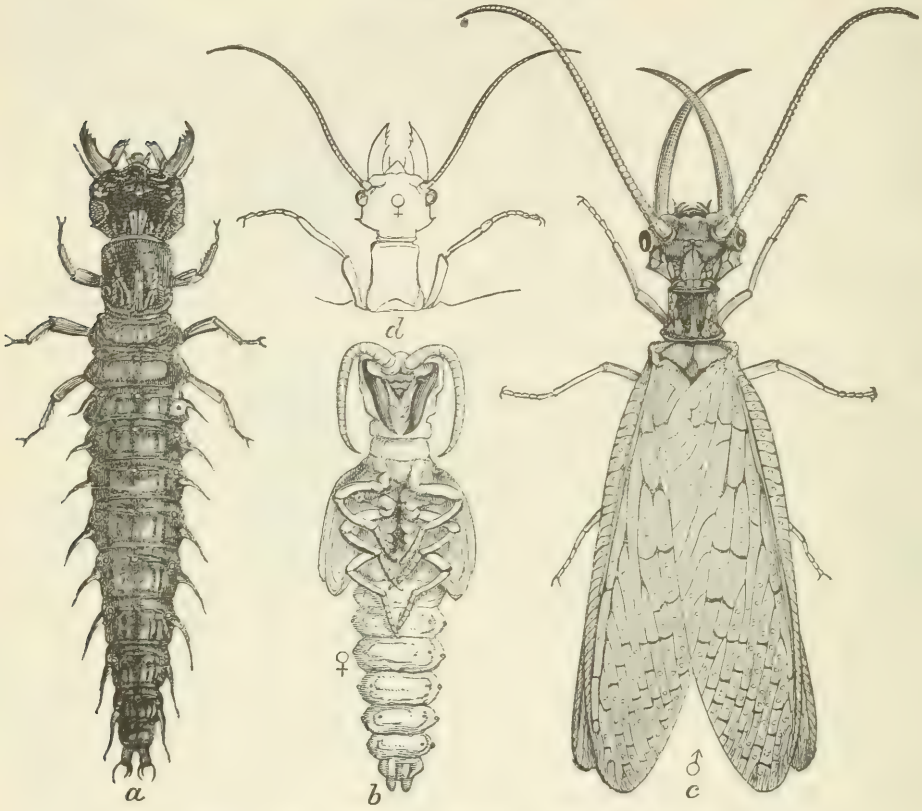
The Hellgrammite Fly (*Corydalis cornutus*—Linn.).

This is an insect which is not uncommon throughout Ontario, and whenever and wherever found, either in the larval or perfect state excites much surprise and curiosity from its large size and formidable appearance; it is not, however, in any way poisonous, as some people imagine it to be. In Fig. 47 this insect is represented in its several stages, while the expanded female is shown in Fig. 48. The larva—a most diabolical looking creature. *a*, Fig. 47—spends the earlier portion of its life in the water, crawling and swimming about upon the bottoms of rivers and streams, feeding upon the larvæ of various other insects which also inhabit the water. Mr. Riley has published a very interesting account of this insect in the first vol. of the American Entomologist, from which most of the following remarks are condensed.

Most aquatic larvæ spend the period of their chrysalis state in the water, and only emerge therefrom when ready to pass into the perfect or winged state; but the insects form

ing the group to which this larva belongs, leave the water while they are still in the larval stater and do not usually become pupæ for several days or even weeks thereafter. Hence the Creato

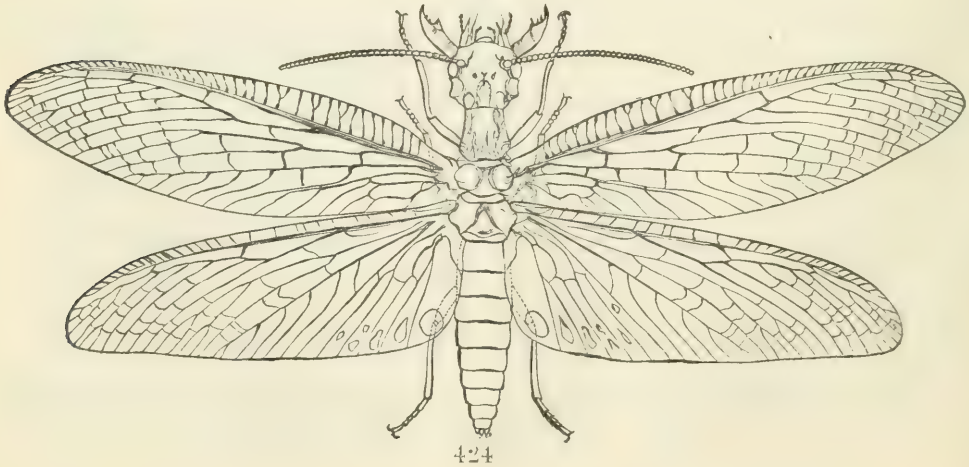
Fig. 47.



Colours—(*a*) rk brown, (*b*) whitish, (*c*) and (*d*) light brown.

to meet their necessities has given them a double system of respiration– a set of gills to breathe with in the water, and a set of breathing holes, or spiracles, to breathe with upon

Fig. 48.



land. In this larva the gills assume the form of paddle-like appendages, and are placed one-pair upon each of the seven front segments of the abdomen, while the spiracles are arranged in the usual manner along the sides of the body. After leaving the water the larva crawls rapidly about, chiefly in the night time, in search of a safe and suitable place in which to spend the chrysalis stage of its existence, usually selecting the under surface of a flat board or log, or burrowing under some large stone. Before attaining its object it sometimes wanders as much as a hundred feet from the water's edge, and an instance is given of one which crawled up the wall to the roof of a one-story building, and then tumbled accidentally down the chimney, to the great dismay of the good woman of the house. At this stage of their existence they are sometimes used by fishermen for bait, and having a very tough skin, one larva often suffices to catch several fish. They can pinch pretty sharply with their strong jaws, and they use the processes at their tail to assist them in climbing.

After a suitable hiding place has been selected, the larva forms a rude cell in the earth, and here changes to an inactive chrysalis (see Fig. 47, *b*). In this figure the wing cases are slightly spread apart from the body to show their shape and structure, whereas in nature they are closely appressed to the sides of the body. The larva leaves the water usually about the beginning of June, and by the end of that month, or the beginning of July, the perfect insect bursts its bonds and appears in the winged state.

Fig. 49.

In this form it measures, when its wings are spread, from four and a half to five inches; these, as shown in the figure, are gauze-like and covered with an intricate network of veins. The forewings are streaked with dark brown and sprinkled with whitish dots, of which latter there are also a few on the hind wings. The male—Fig. 47, *e*—is remarkable for its enormous jaws, which are very long and hook-like, while the female—Fig. 47, *d* and Fig. 48—has short jaws. The flies hide themselves in obscure holes and corners during the day and become active as the shades of evening gather. They frequently fly into houses situated near running water, soon after dusk, attracted probably by the light.

The eggs of the Hellgramite Fly—Fig. 49—are oval, about the size of a radish seed, and of a pale colour, with some dark markings. They are usually deposited in patches, upon reeds or other aquatic plants overhanging the water, where, when hatched, the young larvæ may find ready access to that element which is destined to be its home until the end of the following spring.

BENEFICIAL INSECTS.

By the Rev. C. J. S. Bethune, M. A.

Introductory (General Account of Insects).

1. Tiger Beetles (*Cicindelidæ*).
2. Carnivorous Ground Beetles (*Carabidæ*).
3. Water Beetles (*Dytiscidae, Gyrinidæ etc*).
4. Carrion Beetles (*Silphidæ*).
5. Scavenger Beetles (*Staphylinidæ*).
6. Dung Beetles (*Scarabæidæ &c.*)
7. Luminous Insects (*Lampyridæ*).
8. Lady Birds (*Coccinellidæ*).

Introductory.

Hitherto, in our Annual Reports, we have devoted ourselves to the consideration of those numerous species of insects that inflict damage upon our crops, fruits and vegetables, while we have only incidentally drawn attention to those other species that are useful to us as destroyers of their noxious fellows. We now propose to treat more especially of the latter class—our Insect Friends. We shall include amongst the number of these friends not merely those parasitic tribes whose special duty it is to keep in check the vegetable-feeding insects that would otherwise sweep everything away before them, but also those various other families that are directly useful to us from their products, or indirectly beneficial by acting as scavengers, removing nuisances, fertilizing plants, and performing other valuable offices. This is, indeed, a vast field of nature—one that we cannot traverse in a few pages or in a limited space of time; we must content ourselves, then, with taking one portion of it at a time and considering it somewhat in detail, in order to afford information that may be of use to the reader. Where to begin, and what mode of division to select, is not an easy matter to decide; we think, however, that it will tend to simplicity, if we follow the natural orders into which insects are distributed, taking one at a time and selecting for consideration those families or tribes which are especially serviceable in their different ways. We shall thus not be confined to one form of service fulfilled by insects, but be presented with a variety in turn, and at the same time we shall be able to touch slightly upon a few of the leading distinctions upon which classification is based.

In order to render our arrangement intelligible to the ordinary non-Entomological reader it is advisable that we should give a brief account of the principal structural differences upon which the classification into Orders depends. In the first place, then, an Insect as the name implies (Latin:—*in* and *seco* I cut), is an animal whose body is divided into segments or rings, which are sometimes—as in wasps and hornets—almost entirely detached from each other, and cause the creature to appear as if cut in two. It thus belongs to that portion of the Animal Kingdom called the *Articulata*, the members of which have their bodies composed of short cylinders or annulations, jointed or articulated together. Insects may be distinguished from the Articulata by several characteristics. They breathe, for instance, not through their mouths, like the larger animals, nor yet through gills, like fish, but by means of spiracles or breathing holes in their sides, through which the air is drawn in and taken to all parts of the body. This mode of breathing distinguishes true insects from many kinds of animals

that are sometimes included in the same class with them, such as crabs, lobsters, shrimps, etc., which breathe through gills, and spiders, scorpions, etc., which have breathing sacs in the abdomen. The head of insects is distinct and more or less plainly separated from the rest of the body, thus differing again from crabs, scorpions and spiders. In their larval or grub state insects have, in many cases, a large number of legs, even as many as twenty-two in the caterpillars of some saw-flies, but in their perfect or winged state they never have more than six; this limitation separates them from spiders, which have eight; Centipedes which have from thirty to forty or more, and Millipedes or thousand-legged worms, which have in some species as many as two hundred. Another marked characteristic of insects is their wonderful system of metamorphoses or changes of state (for instance, from egg to caterpillar, caterpillar to chrysalis, and chrysalis to butterfly), ending, in the great majority of cases, in the acquisition of wings. A few other classes of animals undergo some metamorphoses,- in fact, if we include the embryo state, all do so,—but none of these attain to a winged form. Again, insects in their perfect or imago condition uniformly possess a pair of those very singular organs which we call feelers or Antennæ (from the Latin *Antenna*, the yard of a ship's mast), and which are not possessed by any of the numerous members of the spider family. Furthermore insects have their six legs, referred to above, very highly organized, with numerous joints and applications to fit them for all manner of purposes, and very different from the mere bristle like appendages of many worms.

To recapitulate, the distinguishing marks of an insect are briefly these:—1st. They have their bodies divided into *segments*: 2nd. They breathe through openings in their sides *(spiracles)* from which proceeds *trachea* or windpipes; 3rd. They have distinct heads, with jointed *antennæ*; 4th. When adult they have *six articulated legs*; 5th. They go through a number of metamorphoses, ending in a *winged state*.

These are the five grand characteristics of an insect proper; any members of the animal kingdom that do not possess them we exclude from the class, and omit from our consideration in these Reports. Many authors, we are aware, take a somewhat different view of the limits of the class of insects, and—regarding Spiders, Scorpions, Mites, Centipedes, Millipedes, etc., as degraded forms of insects—include them in their Entomological systems. As we all agree, however, pretty much in our definition of an insect proper, it becomes merely a question of technicalities rather than one of practical moment, whether we include or exclude these lower and closely allied forms. For the sake of simplicity and of greater ease in imparting information, we prefer to adhere to the limitations that we have laid down. Any of our readers who desire to look further into the matter—and we trust there may be many—we would refer to Dr. Packard's *Guide to the Study of Insects* as a convenient repertory of information gathered from the works of all the leading authorities upon the subject.

In the higher orders of animals—to quote an account that we wrote some years ago,—* while the internal anatomy is wonderfully complicated, the outward appearance is comparatively simple and plain; all the works of the intricately constructed machine are concealed from view, a few primary organs only being apparent to the sight. In insects the case is just the reverse. The internal organs are few in number and simple in construction; while the external parts are particularly numerous, and marvellously varied to suit the special ends of the almost infinite number of differing species. To the student of Entomology this is a manifest advantage, as with the aid of a magnifier he is enabled to observe and note most of the various parts, or trace out their special uses, without having to resort to the dissection of the object. The great majority are on the surface, and if we give them a little careful examination and patient study we shall soon learn a great deal about them. The most obvious parts of an insect, when closely examined are: 1st: the *Head* and its appendages; 2nd: the *Thorax* to which are attached the wings and feet; and 3rd, the *Abdomen*, which is composed of several joints or segments and which is usually terminated by the organs of generation, or a sting or other instrument.

When we look at the head of a quadruped, we see that it is very small compared with the rest of the body, and that it exhibits only a pair of eyes and nostrils, a mouth, ears, and sometimes horns or tusks. A bird's head, again, displays still less, little more being seen than a pair of eyes and a beak. But take up an insect and examine its head with a lens, or, if it be a large specimen, even with the naked eye, and what a complicated structure do you

* *Canada Farmer*, April 15th, 1868, p. 126.

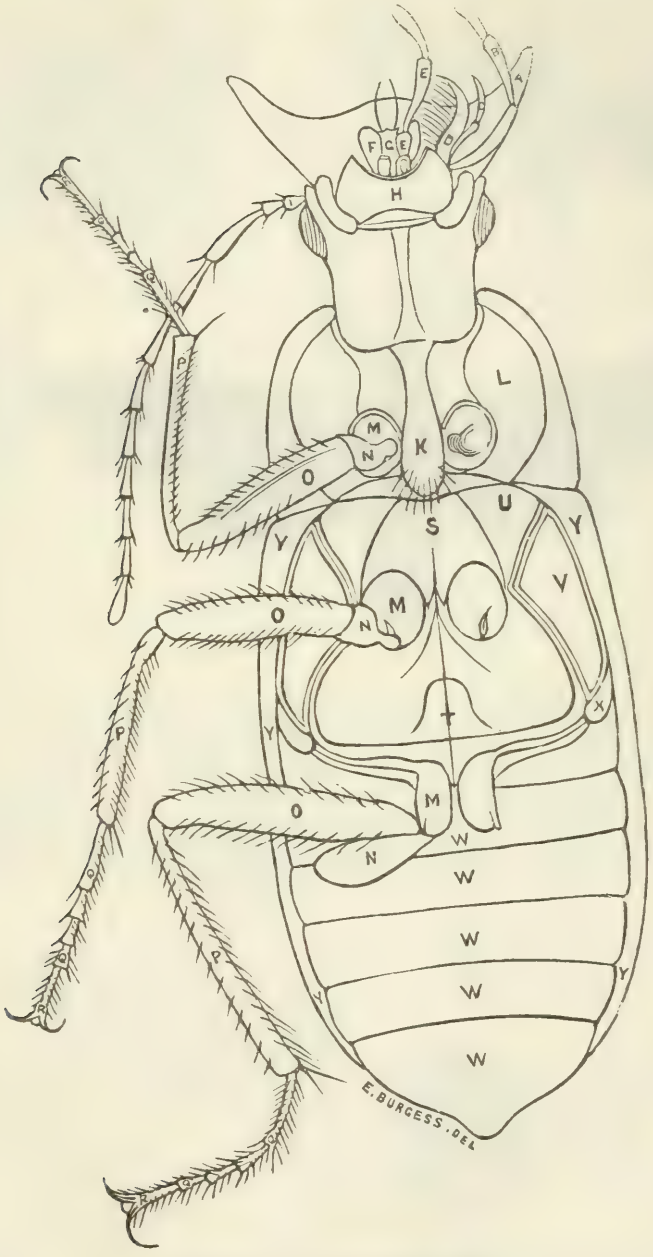
behold! Eyes there are, big and little, antennæ or horns; mouth with jaws above and jaws below, pairs of feelers or palpi, perhaps a sucker, or possibly a set of lancets; instruments for observation, instruments of defence, instruments for taking food, all grouped together in a very small space, and constructed in the most wonderful variety of ways. Compare a few insects of different orders together, and the wonder is still greater. Look at the head of the large Pine-borer beetle, with its powerful jaws and antennæ twice the length of its body, then at the Dragon-fly with its scarcely perceptible antennæ, but with eyes that almost surround it; look again at a large Hawk-moth, with its beautiful feather-like antennæ, and its coiled up sucker that will unroll to more than the length of its great body; now turn to a grasshopper, a fly, or a bug, and see what a change—what a variation of organs is to be seen! To recount all these differences of form, structure, size, colour, clothing, etc., would occupy volumes, without even saying a word about their objects and offices. We must be content, then, with considering the organs as they are common to all, and only observe, for the present, the variations that distinguish the several grand orders of insects, leaving out of sight the minor differences that are peculiar to species, genera, or even families.

The *Head* of an insect—to come to particulars—is a hard, somewhat rounded skull; having an opening in front for the mouth and its group of organs, On each side it has a fixed, immoveable eye, of large size and complex structure, between which are sometimes two, or often three, tiny little eyes, each consisting of a single lens. Close to the large eyes are two moveable jointed organs, called antennæ, of endless variety of form, size and structure, whose exact uses have long been a puzzle to naturalists. The front part of the head is often separated by a seam from the rest of the skull (especially in Beetles), and is then called the *Clypeus* or shield; this part often bears a horn or knobs. The under surface of the head is called the throat, and is divided into various parts, each with its particular name, in the different orders of insects. The head is connected behind with the thorax, sometimes by a very slender neck, sometimes by a barely perceptible division.

The *organs of the mouth*, though varying very much in form, are yet constructed on one principle They consist of six principal organs, two on each side of the opening, one above, and one below. The upper one is the upper lip (*labrum*); the lower the under lip: the upper pair of side organs are the upper jaws or *mandibles;* the lower pair the *maxillæ* or lower jaws. Each of the lower jaws has attached to it one, or two, jointed organs or feelers, called *palpi*, and the under lip has also a pair of these feelers. The jaws, it should be noticed, move sideways, not up and down. There are two principal modes in which the food-obtaining organs are employed, the operation of which is vastly different, and causes an enormous change in form and structure. When the side pieces of the mouth are short, apart from each other, and have a horizontal motion, the action produced is *biting*, as in a beetle; but when these side pieces are elongated, pressed close to each other, and have a longitudinal motion, the action produced is *sucking*, as in a butterfly. According to these modes of action, insects are divided into two grand classes, called in English, *Biting Insects* and *Suctorial Insects*; any classification based upon this difference, must, however, be confined to insects in their perfect form, since caterpillars, for instance, have jaws for biting, which are transformed into a spiral sucking-tube when the insect becomes a moth or butterfly.

In *Biting Insects* the upper lip is a flat plate closing the mouth above; the upper pair of jaws or mandibles are of a hard, horny consistency, and are furnished with teeth for biting and gnawing the food; these teeth are portions of the jaw itself, not separate in any way. The lower pair of jaws or maxillæ, are modified in many ways which it would be tedious to particularize here; and the lower lip is still more complicated, and subject to great variations. In bees, the lower jaws and lip form together a sucking apparatus, while the form of the upper biting jaws causes them to be included among the biting insects. The accompanying large wood-cut, (Fig. 50) of a highly magnified beetle, exhibits all the various parts of the mouth of a biting insect, as well as the legs, abdomen and other parts of the under surface. The clearness of the illustration renders much description superfluous.

Fig. 50.



HARPALUS CALIGINOSUS, Say.

PARTS OF CUT.

Ventra Surface of *Harpalus Caliginosus*.

A Mandible.
B Maxillary palpus.
C Outer lobe of maxilla.
D Inner lobe of maxilla.
E Labial palpus.
F Paraglossæ.
G Ligula.
H Mentum.
I Antenna.
K Prosternum.
L Episternum of prothorax.
M Coxæ.
N Trochanter.
O Femora.
P Tibiæ.
Q Tarsi.
R Ungues.
S Mesosternum.
T Metasternum.
U Episternum of mesothorax.
V Episternum of metathorax.
W Ventral segments.
X Epimeron of metathorax.
Y Epipleura.

In *Suctorial Insects* there is a wonderful diversity of structure. Bugs, for instance, have the two pairs of side-pieces lengthened out into slender lancet-like organs for piercing, the whole being enclosed in the fleshy elongated lower lip, which acts as a sucker. (Fig. 51 *a*.) In Flies, also, the five upper organs are turned into lancets sheathed in the fleshy sucker of the lower lip; this structure is especially seen in the fierce, blood-thirsty Horse-fly (*Tabanus*); in the common House-flies the lancets are wanting. In Butterflies and Moths the lower jaws are greatly elongated into a delicate instrument for sucking, which is coiled up and hidden from sight when the insect is at rest, but is thrust out and extended to the bottom of long-throated flowers when in action. (Fig. 52.) In all these cases the palpi, or mouth-feelers, also are variously modified. The other organs of the mouth about which we need not now speak in particular are the antennæ, and the different kinds of eyes.

Fig. 51.

Fig. 52.

We have just now spoken of insects as being divided into two great sections according to the structure of the mouth in the perfect insects, viz; Suctorial (*Haustellata*) and Biting (*Mandibulata*). These sections are further subdivided into seven Orders, depending upon the structure of the wings. We shall briefly recount the special characteristics of each Order, and then turn from what we fear are dry even though necessary, details to the consideration of our proper subject—Beneficial Insects.

There is an immense difference of opinion among Naturalists with regard to the arrangement of these Orders, but as this is a question that does not concern us in these Reports we shall not enter into it, but merely content ourselves with following here the series adopted by Dr. Packard.

Order 1. HYMENOPTERA. (Greek: *Hymen* a membrane, and *Pteron*, a wing). Includes Bees, Wasps, Sawflies, Ants, Ichneumons, etc. Four membranous wings, with few veins or nervules; the hind pair usually the smaller. Fig. 53 represents a Saw-fly and its larva; Fig. 54 a magnified Ichneumon.

Fig. 53.

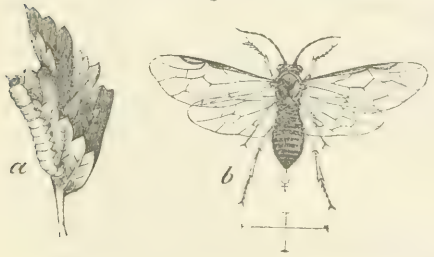


Fig. 54.

Order 2. LEPIDOPTERA. (Greek: *Lepis* a scale, and *Pteron* a wing). Includes Butterflies (Fig. 55.) and Moths. (Fig 56.) Membranous wings, generally four, entirely covered with scales, antennæ almost always composed of numerous minute joints. Butterflies may be distinguished from moths by their club-shaped antennæ; the latter have these organs of very various forms, but never clubbed or thickened at the extremity. The larvæ are usually called caterpillars (Fig. 57),

Fig. 55.

Fig. 56.

Fig. 57.

and are so familiar to every one that we need not enter into any description of them; they may be distinguished from the false caterpillars of Saw-flies by never having more than eight pairs of legs. The pupa is usually termed a chrysalis (Fig. 58), and sometimes is protected by a cocoon.

Fig. 58.

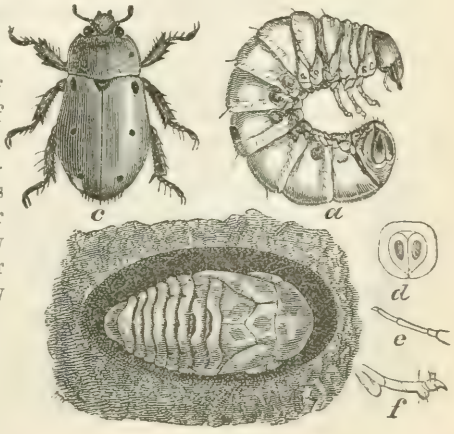
Order 3. Diptera. (Greek: *Dis* twice; *Pteron* a wing). Includes the common Horse and Flesh-flies, Gnats, Mosquitoes, Crane-flies, etc. Two wings only apparent, the hinder pair being in a rudimentary condition, and represented by what are termed 'halteres,' poisers or balancers (Figs. 59 and 60). The larvæ are usually destitute of feet, and are called 'Maggots;' some, however, as the mosquitoes are aquatic and actively locomotive. This order, as well as the two preceding, belongs to the Suctorial or Haustellate section of Insects.

Fig. 59.

Fig. 60.

Order 4. Coleoptera. (Greek: *Coleos* a sheath, and *Pteron* a wing). Includes all the various tribes of beetles. Four wings usually present, the anterior pair of which are hardened and thickened so as to resemble the substance of the head and thorax, and are not adapted for flight, but form protecting cases (called *elytra*) for the ample hind wings, concealed beneath them. Fig. 61 represents a perfect beetle (*c*), the larva (*a*) and pupa (*b*). The mouth is always furnished with jaws for biting.

Fig. 61.



Order 5. Hemiptera. (Greek: *Hemi* half, and *Pteron* a wing.) Includes Bugs, Plant-lice, Boat-flies, Cicadas, Cochineal Insects, &c., Four wings, the anterior pair of which are stiff and hard like those of the beetles, for about half their length, while the remainder is thin and membranous; the hinder pair are also membranous. The mouth is furnished with a sucker or beak, through which they imbibe the fluids, animal or vegetable, upon which they live. (Figs. 62 and 63).

Fig. 62.

Order 6. ORTHOPTERA. (Greek: *Orthos* straight, and *Pteron* a wing.) Includes Grasshoppers, Locusts, Crickets, Cockroaches, &c. Four wings, the anterior pair of which are somewhat thickened to protect the broad net-veined hinder pair, which fold up like a fan upon the abdomen, in long straight folds. The hind legs are large and thick, and adapted for leaping. Mouth furnished with strong jaws for biting and masticating.

Fig. 63.

Order 7. NEUROPTERA. (Greek: *Neuron* a nerve, and *Pteron* a wing). Includes Dragon-flies (Fig. 64), May-flies, Caddis-flies, Termites, Lace-winged flies, etc., Four thin, glassy wings, very finely reticulated, or covered with a fine network of veins or nerves. The mouth is usually furnished with biting jaws.

Fig. 64.

1. TIGER BEETLES (*Cicindelidæ*).

Having now enumerated the various Orders into which Insects are divided, and their chief characteristics, it remains for us to select one for our consideration here, in respect to those of its members who may be deemed directly or indirectly beneficial to mankind. We have decided upon beginning with the Beetles (*Coleoptera*), partly because they are very favourite objects of study with Entomologists, and partly because they present strongly marked peculiarities both in structure and habits, and are very abundantly distributed everywhere. The first family of Beetles is the *Cicindelidæ*, of which we have only one genus, *Cicindela*, in Canada. This name, derived from the Latin, signifies a Glow-worm or bright shining insect, and is applied to them on account of their bright metallic colours, which sparkle in the sunshine. In English they are commonly called Tiger-beetles from their fierce disposition and habit of leaping upon their prey. They feed entirely upon other insects, both in the larval or grub state, and when they attain to the winged or beetle condition. Their favourite haunts are warm sunny banks, sandy roads, railway tracks, or other spots exposed to the full glare of the sun, and free from vegetation, which would impede their movements. Some species, however, frequent grassy places on the borders of woods and among scattered trees. At the approach of the passer-by they suddenly take wing, and fly with great rapidity for a few yards before him, alighting again as suddenly as they rose, but always with their heads turned in the direction of the approaching danger. The same individual may be started up again and again, but after a few alarms, when he begins to find himself the object of a particular pursuit, he craftily eludes further persecution by making a long and circuitous flight back to his former station. By carefully marking where he goes, and going quietly back, we have often succeeded in finding the desired specimen careless and off his guard, and captured him even without the aid of a net. In cloudy or stormy weather they hide themselves in some convenient retreat, but they soon re-appear with the returning sunshine.

The eggs are laid in the earth, where the grubs that are hatched from them also spend their lives. These grubs or larvæ are very curious creatures, and well repay a little observation. It would be difficult to describe their form so as to render them easily recognizable to the reader, but the accompanying cut (Fig. 65.) will afford a sufficiently good idea of their appearance.

Fig. 65.

It will be seen that they have a pair of tremendous, curved jaws, three pairs of legs, and a pair of very curious recurved hooks or spines on the eighth segment towards the tail. They are of a yellowish white colour with a brownish horny head. They live in deep round holes, about the diameter of a lead pencil, the orifice which they usually close with their heads. No sooner does any unsuspecting insect approach sufficiently near than it is seized by a sudden effort, and carried off to the bottom of the hole, there to be devoured at leisure. The larva lives in this manner throughout the summer, and

is supposed to pass through its pupa state in the ground during the winter, appearing in the beetle form early in the following spring.

The beetles, of which over one hundred different species are known to inhabit North America and about a dozen have been found in Canada, are provided with sharp cutting jaws, three pairs of long slender legs, which enable them to run with great rapidity, and a pair of membraneous wings, concealed beneath the handsome wing-covers when not in use. They feed upon small insects of every description, and must destroy incalculable numbers. The accompanying figures of some of our commonest species will enable the reader to recognize them without difficulty.

Fig. 66.

Fig. 66 represents the common Tiger-beetle (*Cicindela vulgaris*, Say), which is found in great numbers all over Canada and the United States. It is a little over half an inch long, and about half as broad, of a dull purplish colour above, and a bright brassy green beneath. On each wing cover above are three whitish lines of irregular shape, as seen in the figure. It is very common on roads and sandy banks throughout the summer.

Fig. 67 represents the purple Tiger-beetle (*C. purpurea*, Riv.), a very handsome metallic purple beetle, nearly the same size as the preceding, in company with which it is often found. Sometimes it is greenish instead of purple. This is one of the first beetles to come out in the spring. We have taken it in numbers in April, and once as early as the 17th of March, before the snow had all gone.

Fig. 67

Fig 68.

Fig. 68. The hairy-necked Tiger-beetle, (*C. hirticollis*, Say) is another common species that bears a general resemblance to *C. vulgaris* though smaller, and with the neck covered with whitish hair, as the name implies.

A most beautiful species is the Six-spotted Tiger-beetle, (*C. sex-guttata*, Fabr.), a most brilliant metallic green insect, with six tiny white spots on its wing-covers. It is sometimes found in gardens, but more usually in partially shaded places, where it chooses as its post of observation some projecting stone or log. It is rather difficult to capture, being exceedingly active in its habits, and is not nearly so common as the preceding species.

Fig. 69.

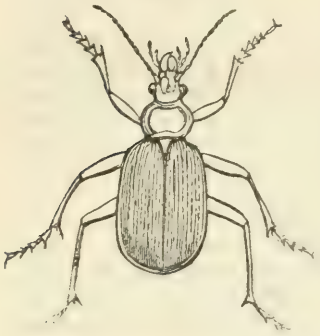
Fig. 69 represents another very handsome and rather larger species which is occasionally found in Canada. As all these beetles live upon other insects, and devour enormous numbers of those that are injurious to us, we beg that our readers, one and all, will abstain from ruthlessly trampling them under foot in the future, and will rather encourage them about their farms and gardens.*

2. Carnivorous Ground Beetles. (*Carabidæ*).

Next of the Tiger-beetles comes the family of the Carnivorous Ground Beetles (*Carabidæ*). Under this general name are included a very large number of different genera and species, which are found all over the world and in all sorts of situations. In Canada we have over forty genera and an immense variety of species already known to our Entomologists, and more are added to the list every year. Some of the species are the most difficult to determine of all our beetles, and afford an intricate puzzle to the student; the general features of the whole family can, however, be easily learnt from a few specimens, descriptions and illustrations of which we now proceed to place before the reader.

* To avoid misapprehension we would state that in this account of the Tiger Beetle, and in those that follow, we have quoted freely from our own contributions to the *Canada Farmer*. As our articles are scattered over a number of volumes and have not been published in consecutive form, we think no apology is needed for their partial reproduction here.

Fig. 70.



Colours, Metallic Green, Purple and Copper.

The largest and handsomest member of the family is the green Caterpillar-hunter (*Calosoma scrutator*, Fab.—'The Beautiful-bodied Searcher'). Fig. 70. It is of the same general shape as the following species, but no wood-cut can convey an idea of its exceeding beauty and brilliance of colour. The head and thorax are dark purplish black, the latter with a greenish coppery margin; the wing covers (elytra) are bright and shining green, with fine longitudinal lines and scattered punctures, and a broad, coppery red margin; the under-side is deep shining green varied with coppery markings: the legs are blackish-brown, in some lights deep purple. This magnificent beetle, as its name implies, feeds upon caterpillars, especially the obnoxious canker-worm of the United States, sometimes even ascending trees for the purpose; its larva (or grub) has also the same useful propensities. It is rather a rare insect in Canada, though found occasionally in most parts of Ontario; collectors of insects can often find specimens in summer after a southerly gale, on the outer shore of Toronto Island, which is a famous place for obtaining rare beetles that have been drowned in the lake and washed ashore by the waves.

Fig. 71.

Another caterpillar-hunter, (Fig. 71), belonging to the same genus as the preceding, is quite a common insect in Canada, and can be found in May and June under logs or stones, as long as the ground is moist; in the hot dry weather it is not so readily met with. It is called the hot, or glowing Calosoma (*C. Calidum*, Fabr,) from the appearance of the wing-covers, which are black with six rows of bright coppery impressed spots, thus bearing a fanciful resemblance to a vessel of coals with a perforated cover. Its general colour is shining black, unrelieved except by the spots just mentioned; still it is a handsome beetle, though not to be compared to the preceding species. Like its congener, it devours caterpillars with avidity, both in its larval and perfect states, and is a capital hand at reducing the numbers of those horrid pests, the cut-worms; we usually transport a number of these big beetles into our garden every spring to keep down these cutters-off of our young cabbage plants.

Fig. 72.

The next large beetle of this family to which we would draw attention, is the murky ground beetle (*Harpalus Caliginosus*, Say,); it is entirely of a dull black colour, and may be readily recognized from Fig. 72. We beg our readers to take particular notice of this figure, as there are a very large number of beetles of the same general shape and structure, though usually smaller, that prey upon other insects and are consequently useful to man. Any dark-brown, black, green or metallic coloured beetles of this shape, that are found under chips, or stones in damp places, or running in grass, may be safely considered as belonging to this family, and therefore be treated with kindness and consideration; it always gives us a pang of regret to find the crushed body of one of these beetles lying by the way side, where it has been ruthlessly trampled under foot by some ignorant "lord of creation." The particular species here referred to is stated by Mr. Riley to be a formidable enemy of that western plague, the Colorado potato beetle; it is also satisfactory to learn that an allied species (*H. Pensylvanicus*, De Geer ?) a very common insect in Canada, is a merciless devourer of the plum curculio. Fig. 73 represents the perfect insect, and Fig. 74 the larva.

Fig. 73.

A much smaller but very peculiar genus of beetles, is called the Bombardier (*Brachinus*,) from its extraordinary power of discharging from its tail end a very pungent fluid, accompanied by a report (resembling the sound *phut*) and some smoke-like vapour; this fluid, which resembles nitric acid in its effects, and makes a stain on the fingers that will last for several days, is no doubt intended for its defence against more powerful beetles. Fig. 75 represents one of these beetles (*B fumans*, Linn.); its head, thorax, and legs are yellowish-red, and its wing-covers dark blue. Like other ground beetles, it may be found under sticks and stones in the spring, and in similar hiding-places on the damp margin of rivers during the hot summer months. There are quite a number of different species of this genus in Canada, but all are very much alike.

Fig. 74.

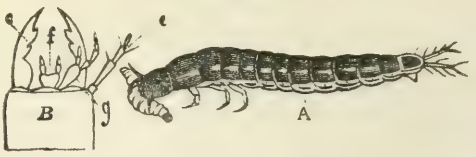


Fig. 75.

It would be almost an endless task to go through the list of species of this family, but we trust that the examples now given will be sufficient to enable our readers to recognize these friendly beetles, and save them from being doomed to a pitiless destruction, that knows no difference between friend and foe.

3. Water Beetles (*Dytiscidæ*, *Gyrinidæ* &c.)

After the carnivorous Ground Beetles, we come, in the ordinary classification of insects to a large group that live almost entirely in or upon the water. Some of them live on the surface of lakes, ponds and pools; others prefer clear running streams; others, again, the muddy bottoms of half-stagnant pools.

This group is divided into two principal families the "diving-beetles" (*Dytiscidæ*), and the "whirligigs" (*Gyrinidæ*). They are all more or less insectivorous, both in their larval and perfect state, and hence beneficial. As their food, however, consists mainly of insects that inhabit the water, and which are either similar in their food and habits to their destroyers, or live upon water plants of no particular value, it can hardly be said that they are beneficial to the farmer or fruit-grower; still, as they are not noxious and are certainly useful in their own sphere, we shall go on to describe them, and implore that their lives may be spared from the destruction so universally dealt out to the poor insects.

The Diving-beetles (*Dytiscidæ*) are mostly large-sized insects of an oval flattened shape, generally of a dark brown, olive, or blackish colour, and often with a margin and other markings of yellowish. Their legs are specially adapted for swimming, being large and oar-like, and covered with long hairs; the hinder pair are very much flattened, also, so as to give a propelling stroke. When they rise to the surface to take in a fresh supply of air—a silver-like bubble of which may generally be seen attached to their hinder extremities—they appear to come up merely from being specifically lighter than the water; but when they dive or swim through the liquid, which they do with great swiftness, they move by means of regular and successive strokes of their oar-like legs. When at rest upon the surface they extend these legs at right angles with the body, generally with the head under water and the tip of the abdomen above, enabling them to draw in air to the spiracles beneath the wing-covers. They inhabit stagnant pools in preference to running water, and are very voracious in their habits, attacking and devouring other denizens of the water, even occasionally preying upon very young fish. We have kept a specimen for many weeks in a glass jar of water, and watched its graceful movements and curious habits with much interest; it fed greedily upon house-flies, aphides, etc., with which we supplied it.

Their larvæ are called "water tigers" from their ferocity; they are long and cylindrical, with large flattened heads, armed with scissors-like jaws, by means of which they seize other insects, and, it is said, "snip off the tails of the tadpoles!" Their body terminates in a pair of long tubes through which they inhale the needful supply of air. When about to transform they creep into the earth near by, and make a round cell, inside of which they assume the pupa state, the perfect beetle appearing in two or three weeks, if in summer, but not till the following spring if in the autumn. We have sometimes seen little pools of water in the spring perfectly swarming with these and other larvæ.

The whirligigs (*Gyrinidæ*) must be familiar to every one. They are those litttle black beetles that one sees so often in groups on the surface of water, whirling and circling about in every direction with great rapidity. "When thus occupied their motions are so exceedingly quick that the eye is perplexed in following them, and dazzled by the brilliancy of their wing-cases, which glitter like bits of polished silver or burnished pearl. On approaching them they instantly take alarm and dive beneath the surface, carrying with them a little bubble of air, which glitters like a drop of quicksilver, and is attached to the posterior portion of their bodies. Sometimes they may be taken flying, their large wings enabling them to change their abode without difficulty, when the drying up of their native pool compels them to migrate. This enables us to account for the occasional discovery of these insects in small puddles of newly-fallen rain-water. The structure of the short hind legs, and especially of the curious branched tarsi, must be examined in endeavouring to account for the singular motions of these insects ; the assembling together of which has been regarded by some writers as resulting purely from a strong social influence, and by others as indicating no closer bond than that of animals congregating round their common food. That the food of the Gyrinidæ consists of small dead floating insects, I have ascertained ; but I would further suggest that, being produced on the same spot, as is the case with the swarms of midges, they are influenced in some degree by the common desire of continuing their species. I have often observed that, in their gyrations, they hit against one another. In dull and inclement weather they betake themselves to quiet places, under bridges, or beneath the roots of trees growing at the water's edge. When touched they emit a disagreeable odour, arising from a milky fluid, which is discharged from the pores of different parts of the body. The remarkable structure of the eyes, which, unlike those of most insects, consist of two distinct pairs, one on the upper and the other on the lower surface of the head, must be greatly serviceable to the insect in the peculiar situation in which it is generally observed, and whereby it is enabled to see objects beneath it in the water, and above it in the air." (Westwood). They are all of a broad, oval form, generally of polished black colour, with broad oar-like hind tarsi, and long slender fore-feet, used in seizing their prey. They vary in size from about one-fifth to half an inch in length.

Besides the Diving-beetles and the Whirligigs, there is yet another great family of aquatic beetles, which belong to a different sub-tribe of this order of insects; its members are termed "Water Lovers," (*Hydrophilidæ*) from their habits.

The members of this family live either in the water, or on the damp margins and shores of streams and ponds ; they are carnivorous in the larval state, but as beetles they feed upon refuse and decaying vegetable matter, thus uniting the qualities of the two families already noticed, and those of the scavenger beetles, which we purpose bringing before the reader by and by. A considerable number of these "Water Lovers" are found in Canada; some of the species attain a very large size, while others are quite minute, and not to be discerned without close observation. As these creatures are not of any very general interest, we may dismiss them from our notice and pass on to the more conspicuous and note-worthy Carrion Beetles.

4. Burying and Carrion Beetles. (*Silphidæ*).

These curious and interesting creatures belong to the family *Silphidæ*; they are distinguished by the flattened form of their bodies, their knobbed antennæ, their habits, and the black nauseous fluid they discharge when handled. Their grand duty is to remove from the surface of the earth all dead or putrefying animal matter, which would otherwise become noxious and offensive. They are usually found in or close to carrion of all sorts, though sometimes they devour putrid fungus ; occasionally we have taken them on the wing, and have even found them attracted by light into our rooms in summer. The *Silphidæ* are divided into several genera, the chief of which are *Necrophorus*, including the Sexton or Burying Beetles, and *Silpha*, the Carrion Beetles; both of these genera are well represented in Canada.

The Sexton Beetles (*Necrophorus*), in spite of their loathsome occupation, are decidedly handsome insects. Their usual colour is deep shining black, variegated with rich orange-red spots ; beneath they are frequently ornamented with yellowish silken hair like that of a Humble-bee ; their antennæ are very remarkable, consisting of a jointed stem terminated by a rose-coloured or orange knob composed of four little cups or plates piled

one above the other. The largest species we have is called the American Sexton (*N. Americanus*, Oliv.) ; it is nearly an inch and a half long, deep black, ornamented above with large orange-red spots on the head, thorax, and wing-covers, and beneath with light yellow hairs on the breast.

These insects are wonderfully powerful for their size, their flight is vigorous, and they are able to run with rapidity. We have at least ten species of these grave-digging beetles in Canada, differing from each other in size and ornamentation, but all possessing the same habits and instincts. They are not at all uncommon during the summer months ; no sooner, indeed, is any small dead animal or piece of flesh left in a decomposing state on the surface of the ground, than they assemble in troops to bury it. After a careful examination of the object, as if to take its dimensions, and ascertain how many labourers would be required for the job, several of them commence operations by creeping beneath the carcass and digging away the earth with their fore-legs ; they continue their labours till they succeed in sinking it several inches, sometimes nearly a foot, beneath the surface ; and at the end of twenty-four hours the object is generally out of sight, unless it be particularly large, or the ground difficult to work in. In this labour the males assist, and as soon as it is accomplished, the females deposit their eggs in the carcass.

Many curious and interesting accounts have been published respecting the habits and instincts of these creatures—two interesting narratives of the kind are given in the *Canada Farmer* for July 15th, 1868, page 214. A German Entomologist relates that he confined four beetles of this genus in a small space, and supplied them with the following quantity of materials : four frogs, three small birds, two fishes, one mole, two grasshoppers, the entrails of a fish, and two pieces of ox's liver ; they succeeded in interring the whole in fifty days. Of course this quantity was much more than sufficient for the nourishment of their future progeny, for whose benefit the burying takes place, and it was probably only because these carcasses were placed within their reach that they continued their burying propensities, (Westwood). As a further instance of their powers, we may mention the following case, related in the *American Entomologist* :—

"On one particular occasion, having deposited a full-grown rat upon newly-moved earth in a particular spot, as a trap for these Burying-Beetles, we found that in twelve hour's time the carcass had been completely buried, all but the tip of the tail, by a single individual of our largest and handsomest species,(*N. Americanus*, Oliv.) a beetle which is only one inch and a half long. It would puzzle an Irish labourer to bury a full-grown whale in the same length of time ; yet proportionately this would be a task of precisely the same magnitude."

The Carrion Beetles (*Silpha*, etc.,) differ from the foregoing in their more flattened shape, and dulness of colour, as well as in their habits and minor peculiarities of structure. Our largest and commonest species is the Surinam Silpha (*S. Surinamensis*, Fab.) Its colour is uniformly black, with a transverse irregular, reddish coloured band or series of spots, near the end of the wing-covers. It is found abundantly in carrion during the summer, and may certainly be considered from its fetid odour and repulsive appearance an exceedingly disgusting, even though highly useful creature. It does not bury its food, like the Sexton Beetle, but may be found swarming in and over exposed carcasses during the summer months, evidently revelling in filth. The handsomest species of this genus is the Shield-bearing Silpha (*S, peltata*, Catesby,) which is remarkable for the broad, thin expansion of its thorax in the form of an ancient semi-circular shield, of a creamy-white colour, ornamented in the middle with a device somewhat in the form of a cross. We have occasionally taken it in numbers about the body of a dead fish. The larvæ of this genus, unlike those of the preceding one, are obliged to seek their own food, which is of the same character as that of their parents, and consequently have strong legs, and a crustaceous flattened body.

5. Scavenger Beetles (*Staphylinidæ*).

The preceding group of insects follow the useful occupation of sextons for the smaller animals, or employ themselves in other ways for the removal of carrion. The next tribe of beetles that come within the scope of our present observation, discharge a somewhat similar office in the domain of nature, and busy themselves in the removal of nuisance from the surface of the earth.

To quote the words of Kirby and Spence (*Introduction*, Letter ix.),—"How disgusting to the eye, how offensive to the smell, would be the whole face of nature, were the vast quantity of excrement daily falling to the earth from the various animals which inhabit it, suffered to remain until gradually dissolved by the rain, or decomposed by the elements! That it does not thus offend us, we are indebted to an inconceivable host of insects which attack it the moment it falls; some immediately begin to devour it, others depositing in it eggs from which are soon hatched larvæ that concur in the same office with tenfold voracity; and thus every particle of dung, at least of the most offensive kinds, speedily swarms with inhabitants which consume all the liquid and noisome particles, leaving nothing but the undigested remains, that soon dry and are scattered by the winds, while the grass upon which it rested, no longer smothered by an impenetrable mass, springs up with increased vigour." The insects that engage in this work belong to many different tribes, chiefly pertaining to the orders of beetles and flies (*Diptera*). A large proportion of the former come in natural sequence almost immediately after the Carrion Beetles already described, and may, therefore, be fitly reviewed here. To give a complete account of all the different families of beetles that belong to the hordes of scavengers, would be a long, and —to the general reader—by no means an interesting proceeding; we shall, therefore, content ourselves with describing the peculiarities in structure and habits of the common sorts.

The first and most numerous family that we come to, includes all those species of beetles, called in England "Rove-beetles" or "Cock-tails" (*Staphylinidæ*). They are readily distinguished from all the other families by their peculiarly long and narrow bodies, flattened form and very short wing-covers, (*elytra*) which only cover one or two segments of the abdomen, instead of almost the whole of it, as is the general rule with beetles. These short wing-covers give the insect somewhat the appearance of wearing a boy's short jacket, instead of a long coat; notwithstanding their brevity, however, they completely conceal and keep out of the way the ample membranous wings which, when not in use for flight, are beautifully tucked away beneath them. The long uncovered abdomen is capable of being moved in different directions, and is employed by the creature in folding and unfolding its wings. When irritated or alarmed it cocks its tail over its back, and assumes a ludicrously threatening aspect: it also possesses the power, probably for defence, of protruding at will two vesicles from the extremity of the abdomen, which emit a very unpleasant, and sometimes indescribably fetid odour.

The chief food of these insects, both in the larval and perfect states, consists of decaying animal and vegetable matters; in early summer every piece of dung that falls to the earth speedily swarms with them, and in the autumn they are equally numerous in fungi, agarics, etc. Some species are also carnivorous, feeding upon other insects; in England a large species, commonly called the Devil's Coach Horse. (*Georius olens*) devours large numbers of the destructive Ear-wig (*Forficula*). "On the least approach of danger," Westwood relates, "this insect, like the rest of the group, immediately puts itself into a most ferocious-looking posture of defence, throwing the tail over the head like a scorpion, protruding the anal vesicles, elevating its head and widely opening its long and powerful jaws."

Upwards of four hundred species of this family of beetles are found in North America, and of these, one hundred and five species have been taken in Canada. Many more undoubtedly remain to be found and described when collectors pay more attention to the minuter forms of insect life. Eight hundred species have been described as found in England alone. In tropical climates they are very rare; their places as insect-scavengers being supplied by the excessively abundant ants and termites.

6. Dung Beetles (*Scarabæidæ*, etc).

The members of the family to which we have now come, and to which we have given the title of "Dung-beetles," for want of a better, have been objects of peculiar interest to mankind for many thousand years, and will, no doubt, continue to attract the attention of all observers of nature as long as the world lasts. Were it not for their extraordinary habits and for the reverence which was accorded to some of them in ancient times, these creatures—like the preceding family—would be simply disgusting to us, even though of great value in the economy of nature.

Every one has, no doubt, heard of the Sacred Beetle of the Egyptians, which was worshipped by them as a god, and reverenced in various ways. It was called the Scarabæus, and belongs to the tribe we are now considering. "Hor-apollon"—according to Louis Figuier—"the learned commentator on Egyptian hieroglyphics, thinks that this people in adopting the Scarabæus as a religious symbol, wished to represent at once *an unique birth—a father—the world—a man.* The *unique birth* means that the Scarabæus has no mother. A male wishing to procreate, said the Egyptians, takes the dung of an ox, works it up into a ball and gives it the shape of the world, rolls it with its hind legs from the east to the west, and places it in the ground, where it remains twenty-eight days. The twenty-ninth day it throws its ball, now open, into the water, and there comes forth a male Scarabæus. This explanation shows also why the Scarabæus was employed to represent at the same time *a father, a man* and *the world.* There were, however, according to the same author, three sorts of Scarabæi; one was in the shape of a cat, and threw out brightly shining rays (probably the Golden Scarabæus), the others had two horns (Copris)."

There is a colossal granite figure of a Scarabæus brought from Egypt in the British Museum, and other smaller representations that we have seen appear to have been worn as amulets, suspended from necklaces or bracelets. It is supposed by some that the plague of "flies" inflicted upon this people in the days of Moses consisted of swarms of this beetle, thus rendering the object of their superstitious worship a means of punishment; but we can hardly think that so innocent and harmless a creature, in other respects, would have been chosen by the Almighty for such a purpose; we do not, however, insist upon any particular view of the subject, as so little is told us in the pages of holy writ.

In Canada we have one species (*Canthon læris*, Drury,) which bears a strong resemblance to the Egyptian Scarabæus in appearance and habits, it is not very common, but is, however, generally distributed throughout the Province of Ontario. There are also several species of another genus (*Copris*), which possess similar habits but differ in their striated wing-covers, and in the extraordinary curved horn with which the head of the males is armed. A remarkable peculiarity of these insects exists in the structure and situation of the hind legs, which are placed so near the extremity of the body and so far from each other, as to give the insect a most extraordinary appearance whilst walking. This peculiar formation is, however, particularly serviceable to its possessors in rolling the balls of excrementitious matter in which they enclose their eggs. These balls are at first irregular and soft, but by degrees, and by continued rolling, they become rounded and harder; they are propelled by means of the hind legs, and the insects occasionally mount on the top, when they find a difficulty in urging them along; probably in order to destroy the equilibrium. Sometimes these balls are an inch and a half in diameter; and in rolling them along the beetles stand almost upon their heads, with their heads turned away from the balls. These manœuvres have for their object the burying of the balls in holes, which the insects have previously dug for their reception; and it is upon the dung thus deposited that the larvæ feed when hatched (MacLeay). These rhinoceros or unicorn beetles—as they may be termed—frequently fly into houses through open windows, when attracted by light in the warm summer evenings. They are especially abundant on sandy soils.

Another family of Dung-beetles (*Geotrupidæ*) performs a similar important part in the economy of nature, by feeding upon and burrowing under newly fallen dung. Its species, however, do not make up pellets and roll them along the ground, as those above mentioned, but content themselves with sinking shafts immediately under the mass of excrement, and there hoarding up the supply of food for their young. They are much more common in this country than the preceding and may often be observed on a warm summer's evening, when the shadows are growing long, hovering about the droppings of some horse or cow, and preparing to do their part in the removal of a nuisance, and the fertilization of the earth.

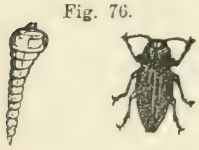
Yet another family (*Aphodiidæ*) must be briefly noticed, before we leave these useful creatures. One species is almost the first beetle to greet us in early spring, as it flies about the manure of the hot-bed, and expands its coral-red wing-covers to the sun. It is the *Aphonius fimetarius*, Linn., and is common in England as well as in Canada. Another tiny species (*A. inquinatus*, Fab.,) swarms in the spring along the highways, resembling a fly as it hovers in the air, but easily distinguished when captured in the hand, or otherwise arrested in its flight; both of them feed upon horse dung. The species of this family are especially numerous in the temperate regions of the northern hemisphere, and devote them

selves entirely to the consumption and removal of the excrement of the larger herbivorous animals. Need we say that they should, on no account, be destroyed ?

7. Luminous Insects (*Lampyridæ*).

In the regular order of families of beetles, according to the generally received classification of Coleoptera, we come to a number of decidedly noxious insects after the Dung-beetles just described; such for instance as the May-beetles and other leaf-eaters, (*Melolonthidæ*), the Buprestis Borers that perforate the wood of a majority of our trees, (Fig. 76), and the Spring-back Beetles, (*Elateridæ*), parents of the justly dreaded Wire-worms. The first family of common insects that we come to after these, are the Fire-flies—luminous insects of the family *Lampyridæ*.

Fig. 76.



In tropical countries the fire-flies belong to two very different families of beetles, the Elateridæ and the Lampyridæ, but in Canada luminous examples of the former are very rare indeed, though we have myriads of the latter. Our fire-flies, in the perfect state, are soft flattened beetles, with the head almost entirely concealed under the projecting hood formed by the thorax; they are generally of pale colours, though sometimes black. They are voracious in their habits; feeding in the larval state, upon earth-worms and soft-bodied insects. The light which they emit proceeds from the extremity of the abdomen, and appears, from its fitfulness, to be under the control of the insects. Its origin and composition have long been a matter of doubt. According to Siebold, "the luminous organs of these insects consist of a mass of spherical cells, filled with a fine granular substance, and surrounded by numerous trachean branches. This substance appears, by daylight, of a yellow, sulphur-like aspect. The light produced from these organs, so remarkably rich in tracheæ, is undoubtedly the result of a combustion kept up by the air of these vessels. This combustion explains the intermission of the phosphorescence observed with the brilliant fire-flies, and which coincides, not with the movements of the heart, but with those of inspiration and expiration."

All our readers are, no doubt, perfectly familiar with the sparkling intermittent light exhibited by fire flies on damp summer evenings. They appear to take especial delight in moisture, frequenting low marshy grounds and river bottoms in myriads, while they but occasionally visit the drier air of high ground. We have sometimes seen them in tens of thousands, nay millions, when driving at night along some sequestered country road bordered by wet, swampy ground, or when taking a nocturnal ramble in search of insects up the valley of the Credit. Brilliant and numerous though our Canadian fire-flies are, they cannot be compared—judging from the accounts of naturalists—with the glories of the tropical species. There, besides species similar to ours, they have the huge lantern flies, said to be two or three inches long, and emitting a most brilliant light and also the large spring-back beetle (Elater Noctilucus) that gives forth a bright glow from spots on the thorax. Southey thus describes the appearance of these creatures in tropical America:—

"Soon did night display
More wonders than it veiled; innumerous tribes
From the wood cover swarm'd and darkness made
Their beauties visible; one while they stream'd
A bright blue radiance upon flowers that closed
Their gorgeous colours from the eye of day;
Now motionless and dark, eluded search,
Self-shrouded; and anon, starring the sky,
Rise like a shower of fire."

In England they have but one species of luminous insect, well known under the name of "glow-worm." The females of this insect are long, flat, soft wormlike creatures, quite destitute of wings; emitting usually a pale steady light from the extremity of the abdomen. The males, on the other hand possess complete wings and wing covers, and are but feebly luminous. We have taken them in early summer in the long damp grass beside hedge-rows in Lancashire, where their tiny light attracted us from some little distance. They did not, however, appear to be at all common.

In this country both sexes of the fire flies are fully winged, and both appear to be equally luminous. The larvæ also of several species possess the property of emitting light; but of these we have rarely obtained specimens. In 1868 we obtained a remarkable larva

which in all probability belonged to the genus "Melanactes" of the Elater family. "Its general colour, (as we described at the time in the *Canadian Entomologist*, vol. 1. page 2) was a dark drab, the posterior angles of each segment, the softer connecting portion between the segments and the under side of the body being very much paler, and of a somewhat dirty yellow hue; on each side there is a deeply impressed line in which the spiracles are situated. When seen in the dark, the insect presented a very beautiful appearance, being apparently ringed and dotted with greenish fire. Each spiracle appeared to be a point of bright greenish light, and the division between each segment a line of the same colour; it looked indeed as is if the whole insect were filled with fire, which shone out wherever it was not concealed by the dark shelly integument. When coiled up on its side it looked like a lovely Ammonite whose striæ emitted green light, and with a point of green fire in each interspace."

All the insects of the Lampyris family, whether luminous or not, may be classed among our friends, as they do not feed upon our crops or fruits, but upon various worms, snails and insects. One species (*Chauliognathus Pennsylvanicus*), a pretty yellow soft winged beetle, with a black oval spot towards the tip of each wing cover, is especially useful from its commendable habit of devouring the larvæ of the dreaded Plum Curculio, when in the larval state itself. The perfect insect we have sometimes taken in great numbers upon thistle blossoms, towards the close of summer.

8. Lady Birds (*Cocinellidæ.*)

From Luminous Insects to Lady-birds is a long leap to take in our description of neutral and beneficial insects. The intervening families of beetles, however, are so addicted to the destruction of our property in one form or another, and the exceptions are so few and inconspicuous, that we must pass them all over, and go on to the consideration of the pretty little creatures—as useful too, as they are pretty—that are generally known by the name of "Lady-birds," (vulgarly called *Lady-bugs*). They belong to the family *Coccinellidæ* of Coleoptera.

After the Luminous insects (*Lampyridæ*) which we just now brought before the reader, there come, according to the generally received classification, a large number of most destructive insects. Of these we may mention the *Ptinidæ*, the species of which "are found in old houses, in furniture, in rotten palings, stumps of trees, etc., which they and their larvæ perforate with round holes in every direction, which are filled with a very fine powder formed of gnawed wood and excrementa; some species feed upon collections of dried plants, skins of insects, etc; whilst others bore into our chairs, tables, and other woodwork, books, etc.; other species feed upon almost every substance, devouring ginger, rhubarb, cayenne pepper, etc: and rendering ship-biscuit often unfit for use; others again feed upon woollen clothes, wheat in granaries, and other stores,"—a most noxious family certainly. After them come the *Scolytidæ*, the members of which are very destructive to trees and timber; the *Cantharidæ*, (Fig. 77,) useful for blistering purposes, as 'Spanish flies,' but very injurious to vegetation; the *Curculionidæ*, (Fig. 78,) one or two well-known species of which are enough to condemn the whole family, e. g, the Plum Curculio and the Pea-weevil; the *Cerambycidæ*, or Capricorn Beetles, (Fig. 79,) the larvæ of which are wood-borers, and attack trees of every kind; and the *Chrysomelidæ*, beautiful golden insects many of them, but including such noxious creatures as the Three-lined potato beetle, (Fig. 80,) the Turnip-fly or Flea beetle, the Colorado Beetle, the newly imported Asparagus Beetle, etc,

Fig. 77.

Colour—Black and Yellow.

Fig. 78.

1

Fig. 79.

Fig. 80.

Colours, Pale Yellow and Black.

The "Lady-birds" belong to the last family of all of the orders of beetles. They are so common and so well known to every child that it is hardly necessary to give any description of them. The accompanying wood-cuts will suffice to remind the reader of their appearance.

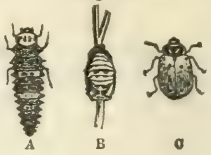
(Figs. 81, 82, 83, 84.)

Fig. 81.

Fig. 82.

Fig. 83.

Fig. 84.



Who is there, indeed, that has not set one on outstretched finger and sung to it in childish glee, "Lady-bird, Lady-bird, fly away home, your house is on fire and your children all burned!"? In France they are much regarded also, and called by children "Bêtes à bon Dieu," "Vaches de la Vierge," etc.; and in England they are termed Lady-cows as well as Lady-birds.

The general colours of these insects are yellow, red or orange, with black spots; and black, with red, white, or yellow spots; their shape is hemispherical, and though they vary somewhat in size, an average specimen bears a considerable resemblance in size and figure to an ordinary split pea; they have but very short legs and therefore creep but slowly; their powers of flight, however, are considerable. When alarmed they fold up their legs under the body and drop to the ground, and if handled they emit a yellowish fluid from the joints of the limbs which has rather a strong and disagreeable smell. In old times this fluid was considered to be an admirable specific for toothache! We have never, however, possessed sufficient courage to test its qualities in this respect ourselves!

As every one knows—or certainly ought to know by this time—the Lady-birds, both in their larval and perfect states, feed upon the obnoxious plant lice (*Aphides*), and are thus of the utmost service to the gardener, orchardist and hop-grower. Some species also prey very successfully upon the dreaded Colorado beetle, and assist beneficially in reducing the numbers of this new insect plague.*

More than thirty species of this family of beetles are known to inhabit Canada. Attention has so frequently been drawn to them in the course of these reports, that we need do no more than say—spare their lives and encourage their propagation by all means; they are the most useful class of insects that we have.

We have now enumerated all the leading varieties of beetles that are in their several modes serviceable to mankind. If any of our readers are now enabled to distinguish between insect friends or foes of this order, we shall feel well repaid for any trouble that these descriptions may have cost us. Our limited time and space preclude us from going on to other orders in this report; when another year comes round we hope, however, to have something further to say upon the subject.

* Vide *Second Annual Report*, p. 72.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (F).

REPORT ON POULTRY, BY THOMAS McLEAN, EDITOR "CANADIAN POULTRY CHRONICLE."

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I. Introductory.

Poultry, from the French word *Poule*, a hen, means domestic fowls which are propagated and fed for the table, such as cocks and hens, capons, turkeys, ducks and geese. Of domestic fowls there are different breeds, and of these breeds, different varieties—instance for example, the Cochin and Hamburgh; of the Cochins we have eight recognized varieties: Buff, Lemon, Cinnamon, Silver-Cinnamon, Grouse, Partridge, White and Black; and of Hamburghs we have five:—Gold and Silver-Pencilled and Spangled, and Black. The same may be said of the Goose and Duck tribe, and in the Turkey class, also, we have a number of varieties, both plain and ornamental. In this paper we shall treat only of those breeds which may be denominated the most useful, including the greater number of that division of birds, known to Naturalists as *Rasores, or scratching birds*, omitting altogether ornamental and water fowls. The information sought to be conveyed, and the conclusions arrived at, are not the results of our own practical experience merely, but drawn from those of the most scientific and reliable writers, breeders and fanciers, in this country and in England.

We have often wondered why our urban and rural population do not rear fowls more generally than they do. It has been shown beyond a peradventure that they can be reared with little expense by nearly every house-keeper, and can be made to pay an hundredfold on the investment, and this, not only by our rural, but by our urban population. Our own practical experience leaves no room for doubt, that poultry can be reared in a city or town, as well as in the country, not in such large numbers, but, with perhaps as much profit to the breeder; we say perhaps, because a good deal depends on the breed kept and the treatment they receive. In either city or town it requires but small space to keep a dozen or twenty fowls; and then the pleasure it gives a person to know that with a little judicious management he will be able to supply his table with birds of his own rearing, and his larder with fresh eggs all the year round, can well be imagined. In villages there can be no excuse whatever for not breeding fowls successfully and profitably. In nearly all the small villages in England fowls are bred by tenants; their children make pets of them. Why cannot our village population do likewise? If our remarks are applicable to the villages, are they not equally so to the farmer? What is there that the farmer produces of quicker sale than eggs and poultry? The prices he receives for them, are in the main remunerative, the labour incurred is light and agreeable, and can be performed by the junior members of the family. The poultry-yard produces food which is highly palatable and nutritious at all seasons, and in this respect is hardly equalled by any other department of the farm. Is it not worth while then, to bestow more care and skill in managing poultry? Left to themselves half their products are often wasted, and half the year they are non-layers. In winter they need simply warmth, light, and sunshine, clean quarters, and plenty of proper food. Every day they will pay for this. In the summer they require (when possible) range, fresh earth, shade, water, seclusion, and protection from vermin. An abundance of eggs, and broods of plump chickens, either for the market or the farmer's table, will result from this care. If it is not feasible to carry on the poultry business on a large scale, it should be done on a medium one. Every farmer should make a couple hundred dollars worth of his products yearly, independent of fertilising properties the farm receives in the manure saved from the hennery. A little care and attention on the part of the junior members of the family will accomplish this. In proof of this we need only point to France. Notwithstanding what has been said about large poultry establishments there, the statement of their existence is now proved to be a fiction. It is from the rural and sub-urban population chiefly, that the large supplies of eggs and poultry annually sent over to England are drawn. No good reason exists why our farming population should not do likewise. The consumption in our towns and cities is annually increasing; the demand far exceeds the supply at all seasons of the year, and will continue to do so. Although as a class we admit that farmers are fully alive to their own interests, when it can be shown to them by practical and ocular demonstration that by making a change they will thereby increase their profit, yet it cannot be denied that in this important branch our community are in every sense of the word "Conservative," and will make no change unless irresistible proof is forthcoming, to prove the importance of that change in a pecuniary and commercial point of view. Proof is not wanting, however, and the change is taking place gradually, certainly, but none the less surely for all that, brought about principally by the introduction of improved breeds of fowls, now happily becoming so numerous in this Province; and to the wholesome competition among fanciers, now springing up and developing itself, at our annual agricultural shows. In view of this fact, we ask for our paper a careful perusal by all into whose hands it may fall, but more especially by the farming community, who, of all others are most interested in increasing our national food supply. And, if we are successful in awakening a greater interest in the matter of poultry-culture in them than they have hitherto manifested, and inducing them to engage in rearing poultry more extensively and profitably than they have heretofore done, then, we shall feel that our labour has not been in vain.

II. Poultry for Profit.

The importance of raising poultry in a pecuniary point of view, has not hitherto been appreciated by the farmer to that extent which their value as a means of food deserves. As an article of food except to the few they have always been a luxury. This should not be so. Poultry can be raised at little expense and sold at reasonable rates, and yet be remunerative to the producer. There are farmers, however, who think "A pullet is a pullet and an egg

an egg and that's the end of it." This is far from being correct. Some kinds of domestic fowls are more prolific and hardy than others, some of greater size and flesh producing qualities; and, others, again, better layers of finely flavoured eggs. In the knowledge of this lies the secret of successful poultry-keeping. Whoever else may engage in poultry-culture, the farmer will always be in at least as good a position, and probably better, than any other to breed fowls successfully and profitably; but his success must depend on the conditions essential to poultry-rearing being properly observed. These are few and simple. He must give his attention and care to this portion of his live stock; he must strictly look after all the products; and he must provide and give proper food. In many cases—perhaps the majority—it will be best to give attention, either chiefly or entirely, to the production of eggs, only killing for the market surplus chickens or old fowls. The amount of profit in this case would very obviously depend in a great degree upon the number of eggs laid annually by each pullet, and this is found in practice to vary enormously; some hens may lay as many as 250 eggs within twelve months, while others will not reach 100. The fact is, that by careful selection of stock for a few generations any desired quality can be largely developed, whether it be the production of eggs, or any of the fancy points by which the amateur is governed in the selection of his exhibition or breeding fowls. The fancier, in whose hands the cultivation of pure varieties has chiefly lain, has for the most part sought to develop other qualities than those which are of the most importance to the commercial poultry-keeper. He seeks principally for "feather," and as his best birds in point of colour will seldom be also the best layers or fatteners, these points are comparatively neglected. It can hardly be doubted that from these causes some pure breeds, taken as a whole, have actually deteriorated in economic value of late years; the point then, to be kept in mind by the commercial producer, and farmer is to make his selections in the same way as the fancier, but with other and different objects in view. It has been repeatedly proved that by selecting as breeders only the best milking cows, in a few years the yield of milk on any farm may be considerably increased; and in the same way, by setting all the eggs from a hen which lays a large annual number of eggs, and from the progeny using as breeders only those which partook most of their mother's good qualities, in about four years a race might be established which would yield considerably over 200 eggs yearly. We are not sure that between 250 and 300 eggs per annum might not be reached, as rare individual hens have been known to attain to even this high standard, but at all events that a vast improvement might thus be rapidly effected is absolutely certain, and attention to this part of the subject by the farmer and poultry-keeper is of the greatest moment. It is probable that with any large fowls which could be obtained at starting, the average yield of eggs would hardly exceed 140 per annum; and if in a few years this could be increased fifty per cent., which we are convinced might be the case, the difference in profit need not be pointed out here. We are aware that mongrel fowls, or first crosses from two different breeds, the Brahma and Minorca for instance, may be found which will largely exceed the annual number of eggs we have stated, but we are also aware that a race of fowls can not be perpetuated by them possessing the same good qualities; reversion and deterioration will undoubtedly take place, and hence the necessity of commencing such a strain with none but pure bred fowls. It may be said that such improvement would demand an intelligence and care which no farmer could be found to give. We question if this be so. There are farmers enough who have intelligence and skill sufficient to breed good cattle and sheep, and who know the difference in actual cash return between a bad and good stock; and once let them see a certainty of success in poultry-culture, and we are convinced the care and the skill will not be wanting there also. Without them at all events, success will never be reached by any one; but is this failing at all peculiar to poultry? Does not the same rule hold good in all other things?

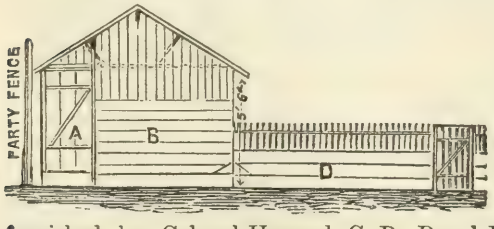
If, instead of producing eggs, the raising of chickens be the chief object sought, not only must a different class of fowls be kept, but a different course of procedure will have to be pursued. A proper knowledge of the breeds, which, when crossed, produce the largest chickens and those which mature earliest, will then be of paramount importance. Chickens from the larger breeds or of good crosses, if the broods have been properly fed and cared for, will be quite large enough to kill at three or four months old—that is they will be from three to four pounds live weight, which is considerably larger than the generality of spring chickens; and by breeding crosses which have the property of early maturity, it is quite easy to send chickens to market at ten weeks old. The best cross for

producing large chickens is the first cross of the Dark Brahma with a Dorking cock. Chickens thus bred, have at the age of six months weighed over 18 pounds the couple; but a cross between the hens of this mixed race, and a Houdan cock, attain a still earlier maturity, and may be killed at ten weeks old of very good size, although ultimately they would not attain to the same size or weight of the half-bred Dorking. If they have as much food as they will eat properly given, chickens up to three months old are almost always plump, more so than they appear a month or two later, and should be killed just as they are, after a night's fasting. Even older chickens are better in their natural condition. If brought to market for sale, however, fatted fowls or chickens will realize the best prices, and hence the knowledge of the best processes of fattening occupy an important place in poultry economics. The old plan of fattening fowls was to put from eight to a dozen in a coop with an open front, feeding them regularly three times a-day. By employing a railed or barred floor, so that all the dung can fall through, very good results may be obtained in this way. The coop must be arranged so as to be perfectly dry and free from draught, and should have a canvass cover to draw down and keep the inmates in darkness. Only fowls which have ran together must be penned up in one coop, or their disagreements will prevent any increase in weight. Before commencing, the coop should be whitewashed and the bottom bars cleaned, to prevent annoyance from vermin; and when put in the chickens should be left for several hours without any food at all. This is essential, and the neglect of it is why many in their first attempts at fattening, completely fail; as the birds being naturally fretful at their confinement refuse to eat heartily, and rather pine away; whereas by well fasting them before any food is given they begin to feed at once. The quantity must be measured by the appetite, and none on any account left, but clean fresh food given as much as can be eaten without leaving, and water being supplied at the same time. When the feeding is done the canvass covering should be drawn down and the birds left in darkness till an hour before the next meal. The times of feeding must be observed with the greatest punctuality, or the fowls will fret and lose condition. The best food will be a mixture of barleymeal and oatmeal or cornmeal, and mixed with milk. A little suet or lard added is recommended by some good authorities, and increases the fattening. The process will be completed in from fifteen to twenty days, and should be carefully watched, as when the proper point is once reached, the chickens if not immediately killed, rapidly decline again. The process of cramming and the operation of caponising, or depriving the cockerels of the power of reproduction so largely carried on in France, need not be entered on here. But there is no doubt the weight of the birds and the delicacy of the flesh are enormously increased by it, and on the ground of cruelty there is little to be said, whilst all our oxen and most of our sheep are prepared for the butcher in a similar way. Before being killed, all fowls should be fasted for at least fourteen hours. Poultry should be plucked or picked whilst still warm, when the feathers will be removed with much less difficulty. It improves the appearance for market greatly to plunge the carcase of the fowl, immediately after plucking, into a vessel of boiling water for a few moments, which will "plump" it a great deal, and make the skin look bright and clean. After scalding, turkeys and fowls should be hung by the legs, and water fowl by the neck. It may not be out of place to remark that if after drawing, the cavity be filled with charcoal broken in small pieces, the fowl may be kept sweet a considerable time.

III. Houses and Accommodation.

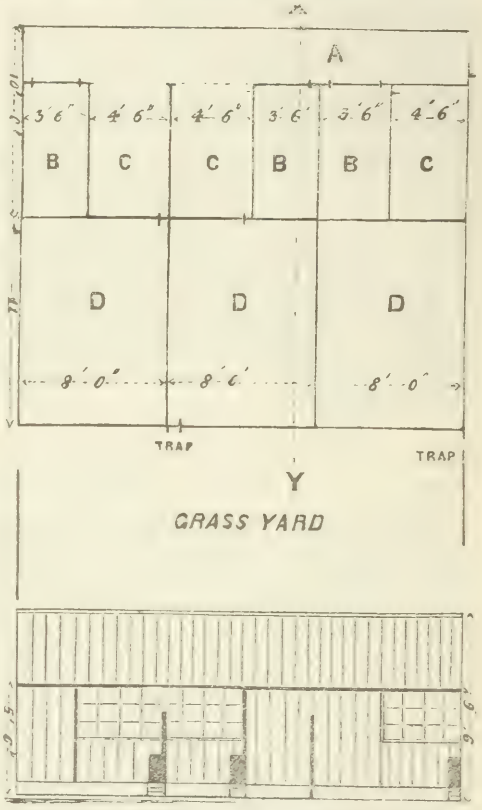
The first essential to success in poultry-keeping is a thoroughly good house for the birds to roost and lay in. This does not necessrily imply a costly one, but it should be in proportion to the size and number of birds kept. Pure air and shelter from wind and weather is all that is required. Pure air of course implies proper cleanliness and proper ventilation; and good shelter implies a retreat dry under foot as well as above, which must also be open to the light, or fowls will not resort to it. Large houses are neither necessary or desirable unless the establishment be on a large scale; and any amateur at all accustomed to the use of tools may do—as many others have done—the whole work of the fowl-house with his own hands. The house itself should be set apart exclusively for the inmates to roost and lay in, and should not be more than large enough to comfortably accomodate them. For a cock and five hens of the larger breeds, five or six feet square is ample for the purpose; for the smaller breeds, four feet square will do; and much more will only

increase the liability to cold and roup in winter on account of the difficulty of maintaining a proper temperature. For, while ventilation is all important, to secure it without either cold or draughts is equally so; cracks and chinks should not be left about the walls for the purpose of securing pure air. To secure fresh air there should be but one well-defined source—the holes by which the birds enter—and their perches must be so arranged that they are out of the draft there will always be between this and the ventilator, which should be as high above the perch as possible. The ventilator may consist of anything except an unprotected aperture which is bad. Louvre boards answer well, but perhaps the simplest plan is to provide a sufficient hole in the wall, as near the roof as possible, and cover it with a piece of perforated zinc. This entirely prevents injurious draft, while providing ventilation perfectly. A window is also necessary. The house may be either a lean-to or a separate building, and if possible should have a southern aspect; it should be well battened on the outside and the roof covered with shingles. We do not approve of artificial warming; a small covered yard attached to each roosting house, having a good large window in front to admit the sun's light and heat, being quite sufficient. The window should face the south. The flooring of this covered run should be well supplied with dry earth and ashes, for the fowls to roll themselves in. A boarded floor either in the covered run, or in the roosting-house is highly objectionable as it harbours vermin; perhaps, for the roosting-house, the best of any would be a hard concrete floor, sprinkled over with fresh sand or earth every time the house is cleaned. The perch should be near the back wall, as near as will not damage the tail of the cock when at roost, but the height and size will vary according to the breed. For Cochins, Brahmas, Creve-cœurs or Dorkings, the perch should be a pole, five or six inches in diameter, and placed not more than one foot from the ground. Other fowls can roost higher, and the perches may be smaller in proportion; but as a rule they are in most roosting-houses much too high and small; for it should be remembered that in a small building a fowl has no chance to fly fairly down for want of space, and often descends with injurious violence from a high roost. The nest should be on the ground except for small varieties, and may go in any convenient position where the manure cannot drop into them. A couple of bricks placed so as to confine a little straw will make as good a nest as anything. The flooring of the shed should be either loose fine gravel, sand or earth well sifted, so as to take out all the large stones. As in most cases where there is a fowl-house there will also be a garden, the last will usually be the best material. It should be turned over to the depth of eight or ten inches once a fortnight and once a year entirely renewed, the earth removed making excellent manure for the garden. Cleanliness in the house itself is very important. All the droppings should be taken away at least twice every week, which is easily done with a housemaid's dust pan and small scraper, or a board may be laid under each perch, and scraped at due intervals. A daily cleansing is best of all. The following is a very good arrangement; fix a broad shelf at the back of the house, and the perch placed four or five inches above it, a foot or more from the wall. The nests are placed on the ground underneath, and need no top, they being perfectly protected from defilement by the board or shelf, and are also well shaded to the great delight of the hens. The shelf can be scraped clean every morning with the greatest ease and comfort, on account of its convenient height, and slightly sanded afterwards; whilst the floor of the house is never polluted at all by the roosting birds. For Cochins or Brahmas, the perch may be dispensed with, and the shelf or floor littered with straw, shaken up every night and renewed weekly. This arrangement of house, allowing as it does of the nest being placed immediately under the perch gives a greater amount of floor space than any other, and also keeps the fowls from any upward drafts of air; but daily attention becomes in this case absolutely necessary, to keep the shelf from becoming foul and infested with vermin.

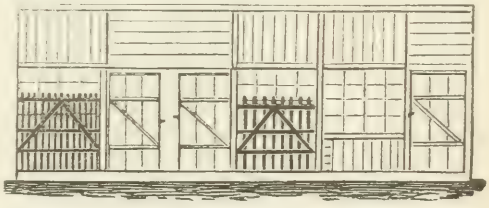


In the *Canadian Poultry Chronicle*, 1870, appears a plan of a poultry house furnished by Colonel Hassard, C. B., Royal Engineers, showing covered and gravelled

runs, and grass yard, which for warmth and comfort of the fowls in the winter season, as well as suitability to the Canadian climate, cannot be surpasssed; we reproduce it here. In the plan given room is provided for about eighteen or twenty hens of the larger breeds, and three cocks, but is capable of extension, in a direct line, to afford accommodation for any number of fowls and breeds that the owner may think fit to keep, always bearing in mind, however, to devote a space of about ten square feet, at regular distances, for hatching rooms; these rooms may also, when not used, be devoted to the storing of grain for food for the fowls. The yards may also be increased in size, to such extent as the space devoted to poultry keeping will admit of. In the inside elevation the interior arrangement of the building may be seen; the gates which lift off from two cleats, instead of hinges, are left off to show the covered run with glass front more clearly. In the part C there is no flooring, and, as previously recommened, ought to be kept well covered with fresh dry earth, or wood ashes, to prevent vermin, and from which, as well as the roosting places, the droppings should be removed daily. Grain may then be thrown into this run during severe weather, and soft food and water may be placed in the passage outside the bars, through which it can easily be reached by the fowls. No windows in the back wall are required or necessary, the light admitted through the glass front of the covered run being sufficient. The building may be constructed of rough inch lumber, and battened on the outside; the roof may be either battened or shingled; a shingled roof is of course the more preferable of the two. Ventilators may be erected on the top at distances of about fifteen feet apart, or holes covered with perforated zinc, as previously mentioned, will answer the purpose equally well. The yard fences may be made of sawn laths, and nailed to pieces of inch by inch and a half scantling, secured to posts driven in the ground, and may be of any height, from four feet upwards, as shall be necessary to secure the class of fowls kept. Hamburghs and others of the smaller breeds of fowls necessitating the construction of much higher fences than do Brahmas, Cochins, &c. There is much to be said in favour of this plan of a poultry building. The fowls can at all seasons and in all kinds of weather be seen without going out of doors in front of the yards running alongside the latter, a thing much to be desired in this Canadian climate.



A. Covered Passage. B. Breeding and laying.
C. Covered Yard. D. Gravel Yard.



With regard to the minimum of space absolutely necessary to keep fowls in health, experience has taught us that if the birds are only of moderate or small size, ten square feet of run for each bird may be made sufficient, adding half as much again for larger kinds.

This is independent of roosting house, and supposes the most scrupulous attention to cleanliness and judicious diet. But if a grass run can be given it will be far better, giving higher condition with much less labour, as the shed floor will then only need turning over occasionally, and removing once a year. For Spanish or similar breeds not quite one hundred square feet for each bird will be needed to preserve the grass; thus a cock and four hens would require a grass-run of about twenty by twenty-five feet, which will remain pretty fresh and in capital order. Brahmas and Cochins require fully as much again, or the grass will soon become trodden and foul. In any poultry yard there are some essentials, attention to which is necessary to health and prosperity; this is especially to be secured in the early chicken-nursery, for if the young brood be put upon a flooring even a little damp early in the year, it will be impossible to prevent cramps from making sad inroads even in the most hardy breeds. But in the shed of the adult fowls it is almost equally important. The grass-run may be a damp, cold clay, but if so it is all the more essential that the shed to which the occupants resort in bad weather shall be perfectly dry; and in erecting a yard money spent in securing this end will save many times the amount in future, even if the natural soil be very bad as regards cold and damp there is no difficulty in accomplishing the desired object. Hen-lice or other vermin should from the very first be guarded against, or they will be a great annoyance to both the fowls and their owner. The walls should therefore be carefully lime-washed twice or three times every year, and if at any time vermin should get into them be expelled by syringing all over either with parafine or a solution of carbolic acid. The last is certain death to nearly all insects, and is one of the most valuable additions to the resources of the poultry-keeper.

IV.—The Selection of Stock and Mating.

The Selection of Stock.—Any man who affirms that some one particular breed is the best, not only for himself but for every body else, is simply carried away by enthusiasm for his own pet hobby. It may be the best for him and at the same time the very worst for the friend to whom he recommends it. It is not for nothing that fowls have been bred differing not only in every point of appearance, even in habits and instincts. These peculiarities fit each fowl for some particular set of circumstances, and are in themselves an evidence of the superiority of pure breeds over any ordinary mongrels that can be procured. Many persons who have every requisite for success fail to keep poultry profitably because their stock is not adapted to their circumstances or to the purpose intended. Were all fowls alike in their characteristics, this of course would not occur; but the very fact that so many breeds have been developed and perpetuated by the art of man, differing in every conceivable quality, as well as in every point of mere appearance, itself proves the necessity of considering somewhat the special requirements of each breed, and its adaptability to the circumstances in which it is to be kept, before the choice of any particular breed of fowls be made. Many persons indulge the idea that mongrels, or "common fowls," will surpass any pure breeds as regard useful qualities. This is a very popular error, and attributable to ignorance of the general characteristics of pure bred fowls. Whatever be the point desired in a stock fowl, it is to be considered that there is some one at least of the several varieties in which that point has been especially and eminently developed to a far greater degree than can be found in any barn door or common birds. It matters not whether the desired feature be in the shape of constant laying, larger size, fine quality of meat, early maturity for the market, hardihood, or any thing else; there is this at least, some one fowl in which that quality is the leading characteristic, and which is therefore the best for the purpose desired. It has been found that very valuable results are often obtained by putting a cock of a good breed to fine mongrel hens. There is very little doubt that the coloured Dorking was first produced in this way. A tolerably good Dorking cock mated with any fine large-framed hens will always produce much improvement in the table qualities and early maturity of the chickens; whilst a Spanish or Minorca cock will generally increase considerably the number of eggs from his progeny. But when only one lot of fowls can be kept, the proper advantages to be derived from judicious first crosses can hardly be secured; and we are convinced that good and pure

varieties will in the end prove better than mongrels. None of these lay as well as certain pure breeds; none grow so large, none are so hardy or such good eating; hence none are so likely to answer the purpose of even the purely commercial poultry-keeper.

The chief breeds of poultry may, for economic purposes, be classified as follows, the order of naming representing as nearly as possible their average comparative value, though this will vary somewhat in accordance with circumstances. As layers:—Hamburghs, Minorcas or Andalusians, Houdans, Brahmas, Leghorns, Spanish, Polish, Dominiques, Game, Cochins, La Fleche. For quality of meat:—Game, La Fleche, Dorkings, Crevecœurs, Houdans, Polish, Brahmas, Dominiques. For size and weight:—Brahmas, Cochins, Crevecœurs, Dorkings, La Fleche, Malays. For hardiness:—Houdans, Brahmas, Dominiques, Cochins, Minorcas, and Andalusians, Leghorns, Game. As sitters and mothers:—Dorkings, Game, Dumpies, Silkees, Dominiques, Brahmas, Cochins. We might add that for combination of useful qualities generally, we would name Brahmas, Houdans and Dominiques, as most worthy of attention. For the general run of a farm, Brahmas, Dominiques or Houdans will no doubt yield the best return. Brahmas where many chickens are required, Dominiques, where only a few are wished for Houdans where eggs alone are the end in view. The Dominique we regard as a generally useful fowl, which only requires to be better known to be highly valued. It has the general appearance and the edible qualities of the "Cuckoo" Dorking, but differs from it in having yellow legs and a far hardier constitution, besides being an infinitely better layer. Sober and unobtrusive in its garb, it nevertheless always looks "respectable" and well; and its plain, homespun suit is the very thing for the barn yard, and the wear and tear of every day life. With an unlimited range, or an extensive orchard in which to roam, the Silver Spangled or Pencilled Hamburgh will sustain its claim to be an unrivalled producer of delicate white eggs; or if rather larger ones be desired, the Black variety will answer the call; while any of the Hamburghs, in their matchless outlines, offer the very ideal of beauty in fowls. In such circumstances, also the Royal Game fowl is an unrivalled layer, while it will always provide a pair of birds for the table when required, which surpass any other in flavour, and are often equal to the Pheasant if not overfed. Or, if the owner prefer the gigantic Asiatics, in such happy circumstances the Brahma will borrow an added grace and a new lustre, and thrive and pay better than ever; or the White Cochin will set off its pure and dazzling plumage by contrast with the grass; or the delicate-looking Buff will appear at its very best while walking over the livery green. Any of these will both pay for their keep and add to the attractions of the noblest farm home in the Province.

But of still more importance than a wise selection of breeds is the proper age of the birds themselves. Considered merely as a producer of stock, no hen should be allowed to see more than her third autumn. With valuable fowls the case of course is different, as apart even from prize-winning, a dozen fertile eggs from a first class bird may be well worth the keep of a year; but as regards the mere production of eatable product, the rule must be rigidly enforced of *killing every hen at the age of two-and-a-half years at the first symptom of moult.* In very many breeds, Brahmas particularly, the second season's eggs are more numerous than the first, but after that all fowls show a great falling off, whilst they also become too tough to be eaten. On the other hand, by killing at the age stated, they may be either eaten or sold at a fair price, while the best part of their lives only is any expense to the corn bin. No rule is so imperative to profitable poultry-keeping, and yet none so constantly neglected. For fowls to be profitable then, they must be regularly killed at moulting time, when two and a half years old; of course if they are pets it is hard to kill them, and the female members of the family especially will protest. That is another matter. A hen may be kept to be petted just as lawfully as a canary; but the object then in view should be borne in mind, and nothing more in the shape of profit expected from one than from the other. Not less important is the time of year at which the birds were hatched. It has been repeated in various works on poultry that a pullet in whatever circumstance *must* begin to lay at a given age; but this we have found is by no means the case, a difference of months being caused by the time of hatching. If the age of five months finds a pullet belonging to one of the more prolific breeds in the midst of warm weather, say August, eggs may be expected about that time; indeed great care is needed if it is desired to prevent laying at such seasons. But birds hatched in May will complete their six months in October; and in very few cases eggs will be procured before Christmas, if even then, unless the feeding be unusually good. Still later hatched—let us suppose late in May or early in June, it will be as late as next spring

before most of the pullets are producing eggs, and ere this occurs many of them will be nine months old. The effect of mismanagement in the date of hatching upon the profit and loss account is hence readily seen, and it is in this way that about half the failures in poultry-keeping are caused. Ordinary fowls become broody oftener in May than any other month, and the bright warm days tempt the owner to choose that time for hatching the chickens. The latter do well indeed—they enjoy themselves, and thrive and grow, but they will not pay—whereas chickens hatched from the middle to the end of March, or early in April, will require more attention certainly, and call for much self-denial occasionally, in the shape of braving bad weather to see they are duly cared for; but will often if in reach of a town market, repay the whole of their cost even before New Year. Nearly all fowls, however mismanaged and if not too old, will, so long as they are in tolerable health lay freely in summer; but eggs are then cheap, and it is the winter that chiefly decides which side of the balance sheet shall preponderate. Eggs in winter mean profit; the want of them as clearly means loss. Pullets hatched early will moult early also, not only getting better and quicker through the process, and having warmer weather for it, but getting ready to commence laying in good time again. To say, as some do, that no *hens* of any breed will lay in winter, is a mistake. Brahmas often re-commence laying in November. Regarded as laying stock, therefore, one-third should consist of pullets hatched in March, and another third of hens hatched the March previous, and the remainder of birds a year older still, which will be killed at moulting time. Thus every fall the hens at two years and a half will be killed and replaced by pullets six months old, which will commence laying almost immediately, and be followed in succession by the hens as they moult out, so keeping up a regular supply. Late chickens should be either sold or killed for table.

We have already expressed our preference for pure breeds, when possible; but the cost will deter many from obtaining them, and common-bred fowls selected with judgment will also yield a good return for their keep. Small, weedy-looking birds should always be rejected, and those which show signs of good parentage and good feeding be alone chosen. Any fowls which have been starved while growing will never lay well in after life. The "Cuckoo" fowls (resembling the Dominique) almost always lay well, and so do most birds having much black in their plumage. Again, as a rule it will be found that yellow or black-legged birds are generally good layers; but white-legged birds are mostly inferior, though excellent for table. By attending to these particulars and ascertaining carefully the date of hatching, very excellent and profitable stock may be secured by a small outlay.

Mating. The secret of all-perfect mating, whether for exhibition birds or the production of economic or useful qualities, is to use no bird with a positive defect. It is to seek in both parents that which you wish to perpetuate. This is true not only of the stock birds you are using, but also of those that are running with them in the yard. Nothing that is objectionable should meet or offend the eye. In breeding it must be recollected, perfection, or the approach to it is difficult to attain with all the means and appliances to boot, and therefore, if anything be neglected, there is small hope of success. In mating for feather, degrees of merit may be taken into consideration. Thus, in a Silver Poland or Spangled Hamburgh, it would be worse than useless to seek to produce the correct white sickles with black moons by means of birds that lacked them themselves. There was never a greater triumph, as the result of mating, than the manufacture of the Sebright Bantams. If let alone the breed would return to the old brown, white, black, and spangled fowls that were the ingredients. If lacing in this breed becomes faint recourse must be had to a black hen crossed with a Sebright cock, her produce, much too dark, must be put to the faintly laced birds. The black hen having brought the requisite colour, is done away with, but her dark descendants are skilfully mated, till the good effect of the colour is seen throughout the yard. Whenever colour is the desideratum the principal drawback is the time employed in the operation, years being necessary. It may often be shortened by making many runs at the same time, all differently composed; but this requires appliances which are not within the reach of all. Where size is required, the most successful choose the largest possible hen, and a perfectly shaped middle sized cock; their progeny are generally large sized birds. Great care should be exercised in the choice of fowls, when it becomes necessary to introduce fresh blood into a yard, as it occasionally will. Two strains widely distinct, or in which there may be no blood already

common to both, may very possibly produce chickens with defects not to be found in the parents. For instance, supposing a really first-class Spanish cock to be mated with some of the very best hens which can be procured, it may very possibly happen that nearly all the chickens will have more or less red in their face, though both parents are unexceptionable. In the same way two alien strains of Buff Cochins have been known to breed pullets with a great deal of black in the hackle, though both parents were perfectly pure in colour. These anomalous variations for a long time puzzled breeders, and were indeed mysterious, being apparently opposed to the fundamental axiom "like produces like;" but the mystery has been cleared up by Mr. Darwin, who has shewn them to be the effect of the tendency to reversion so well known to every amateur. "It has long been notorious," says this eminent naturalist, "that hybrids and mongrels often revert to one or both of their parent forms, after an interval of from two, to seven or eight, or, according to some authorities, even a greater number of generations. But that the act of crossing in *itself* gives an impulse towards reversion, as shewn by the appearance of *long lost* characters, has never I believe been hitherto proved. The proof lies in certain peculiarities which do not characterise the immediate parents, and therefore cannot have been derived from them, frequently appearing in the offspring of two breeds when crossed, which never appear, or appear with extreme rarity, in these breeds so long as they are precluded from crossing." The exent to which hereditary peculiarities may be dormant in a strain, and be therefore capable of revival under this or any other stimulus, is one of the most surprising facts in physiological science, and still more occult manifestations of it have been specially remarked upon by Mr. Darwin, under the name of "latent characters." Very nearly related to this subject is that of the duration of the cock's influence over hens with which he has been mated; and, indeed, it is difficult to give any illustrative facts which do not trench upon both. Among many breeders, it is the custom to let all the chickens run about indiscriminately, until a few weeks before they are wanted for breeding, and it is assumed that a week or two's separation will destroy all evil effect, and ensure purity of produce. This is not always the case. The effect of a first union especially is often traceable in some degree through the whole life of that hen: we will give a few illustrations from well-known breeders. Mr. J. K. Felch, states in the New York *Poultry Bulletin*, that, as the result of long experience he has acquired and acted on the conviction, that if the first three eggs laid after removal of the cock occur within four days, they will be his progeny, and that the fourth egg will belong to the new one. As proof, he states that he allows all his young stock before sale to breed together indiscriminately, relying on the few days seclusion on rail or steamer to counteract all evil: and he adduces testimony from many purchasers to prove that this is so, and that on arrival his birds always breed pure. Mr. Huntingdon, a noted game breeder, confirms this view from an experience of twenty years. Mr. Felch again reports a special experiment, in which he secluded from the cock two Brahma hens. The change of locality, as it often does, stopped their laying after the first egg, and they did not lay again till the fifth day. He set the eggs then laid, but only one of the three eggs laid on the sixth day, shewed signs of hatching, the rest being clear. And still later, in December, 1871, another fancier reports putting a Houdan cock with two Brahma hens, and after letting him remain a few days, separating him and setting the eggs, which were carefully dated. The third egg after the separation of one hen, and the fourth of the other, hatched, the rest being clear. Further, after a few days' separation, a Brahma cock was put with the hens, and all the chickens appeared perfectly pure, none shewing any trace of Houdan blood. In another authentic experiment, a common dark hen with chickens, after commencing to lay, was allowed to be once in company with a Brahma cock, after which eight of her eggs were set, but the result was only one chick resembling the Brahma. Such facts, and others to the same effect, which we omit for want of space, tend to prove that the influence of a cock only extends for a short time after the union. But it has long been the opinion of many fanciers that it often extends further; and there is now to be considered another class of facts which tends to prove this view of the case. Mr. W. Simpson, New York, allowed a hen which began to lay with her chickens to remain several hours with a cock, and then set the eggs, of which three contained chickens. Mr. E. Howlett secluded a fine Buff hen, which laid sixteen eggs after separation, and of which fourteen produced chickens. Another gentleman separated both Cochin and Dorking hens, and the eggs for six days were fertile. And still another

set the eggs till the tenth day after his death, from a hen which had run with a Brahma cock, all proving fertile ; but when she commenced again after two days' cessation, all were barren. These experiments were simply directed to determine the question of fertility, but others bear both upon this point and that of preserving purity of race. A. McPayne, in England, had two Spanish pullets running with both a Spanish and a Cochin cock. After they began to lay the Cochin was removed, and *six weeks* after the eggs were saved, and set ; but the chickens were feather-legged, in all other resembling the Spanish. On another occasion the same gentleman allowed a black-red Game hen, which laid with chickens, to run a few hours with a Brown-red cock, and nine eggs produced chickens, which all resembled the father, or Brown-red. Another English gentleman, when residing in Canada, sold his Brahma cock and one hen, allowing the hen left to run afterwards with a spangled Hamburgh cock which had five hens of his own. Every egg laid for ten days produced a pure Brahma chick, that laid on the eleventh day was a half-bred. A Mr. Woodward, of the United States, bought in March some Spanish pullets which had been running all the winter with a native cock, and though no eggs were set till two months after purchase, all the chicks even then showed the native points in a high degree. Another gentleman, breeding game, finding a neighbour's feather-legged Bantam cock come over his fence, penned his fowls in securely, and saved no eggs for a month after, but several chicks still had feathered legs, though with no other sign of the cross. From these examples, the difficulty of drawing any definite conclusion can be easily seen, but from the general results of the experiments cited, it appears, that in every case the influence of a cock (unless over-mated) extends at least four days after separation, and perhaps this may be taken as the ordinary rule, but that in many instances it extends to nine or ten days, and that in some at least, it may last for fifteen or sixteen. Differences, no doubt, depend greatly on the breed, the vigour of the stock bird, the number of hens with him, and the period as regards the beginning or the end of her "batch of eggs" at which either the union or separation takes place. But, besides mere fertility, there are other considerations and, in the first place, it appears indisputable that eggs may be so far fertilized as to commence hatching, and yet not have sufficient vigour to complete the process successfully The number of cases where such experiments have been made, in which part of the eggs produced showed signs of hatching, but *did not hatch*, is proportionately very great, and the conclusion will not be lost on the intelligent breeder. Next, it is utterly impossible to resist the conclusion that, beyond fertilization, the act of union exerts in many cases, a more mysterious and far-reaching influence. It seems beyond the possibility of a doubt, that again and again hens of different breeds, and female animals of various kinds, after the birth of half-bred offspring, have ever afterwards manifested a plainly evident tendency to produce offspring bearing more or less strong traces of the same character. With regard to the ages of the birds which are to be bred together, there is no universal rule. Cocks and hens in their second season will always breed well together, and the chickens usually fledge more kindly than the produce of either older or younger birds. The offspring of cockerels and pullets mated together are worst in this particular, and in the large breeds are also more subject to leg-weakness. A cockerel mated with adult hens is preferred by most breeders, and usually produces very vigorous and large chickens, but if only two or three hens be put with him, there is almost sure to be a preponderance of cockerels. An adult cock mated with pullets is also a good arrangement. A valuable hen may be kept, and her eggs set as long as she lays, but except in rare cases, a cock is of little or no use after he is four years old, unless for exhibition. In some cases productive vigour may be maintained beyond four years ; and so long as a breeding bird of proved value shows indisputable liveliness and vigour it would be a pity to discard him. From the foregoing it may be seen that the breeder has some control over the sexes of his produce, and we may repeat here more definitely that the following have long been verified by general experience, as ordinary rules, though numerous exceptions occur :—1. If a vigorous cockerel be mated with not more than three adult hens, the cocks almost always largely predominate in at least the early broods ; later this becomes uncertain. 2. If an adult cock be mated with not more than three pullets the result is very uncertain, the one sex being as likely to occur as the other, but usually there is a decided predominance on one side rather than equality. 3. If an adult cock be mated with five or more pullets, the pullets are generally in excess, and what cockerels there are will be most numerous in

the earlier eggs. 4. Young birds or adult birds mated together are very uncertain ; but the fewer hens and the more vigorous the stock, the greater is the proportion of cockerels, which are always more numerous in the earlier eggs of a season than the later. It is also a curious fact that chickens hatched late in the season are often *perceptibly more short-legged* than the earlier birds. From these facts, which nothing like certainty can be obtained, it is manifest that the breeder possesses considerable power of obtaining such results as are desired.

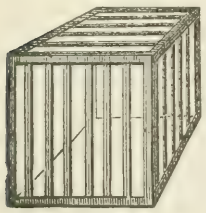
V. Incubation.

Beyond the fact that an egg consists of yolk, white and shell, little is popularly known respecting its structure ; and even a less amount of knowledge prevails regarding the changes that occur in it during the development of the embryo. In these as in all other cases, ignorance leads to serious errors in management, and consequently to severe losses in practice. The ovary of a hen during or near her laying season presents an appearance much like that of a cluster of fruit. There are more, properly two, such organs in every bird ; but one remains merely rudimentary and undeveloped, the fertile one being almost always that on the left of the spine to which it is attached by means of a peritoneal membrane. By the ovary the essential part of the egg, which consists of the germ and also the yolk, is formed, each egg being contained within a thin and transparent *orisac*, connected by a narrow stem or pedicle with the ovary. These rudimentary eggs are of different sizes according to the different degree of development, and during the period of laying are constantly coming to maturity in due succession, so as to keep up the supply of eggs with which we are so familiar. It is worthy of remark that from the germ of every egg a narrow passage or canal runs to a small chamber in the centre of the yolk, which can be readily seen if the yolk of a hard boiled egg be cut across. As the yolk becomes fully matured, the enclosing membrane or ovisac becomes thinner and thinner, especially round its great diameter or equator which then exhibits a pale zone or belt called the *stigma*. Finally fecundation takes place, the sack ruptures at the stigma, and the liberated yolk and germ surrounded by a very thin and delicate membrane, is received by the funnel shaped opening of the oviduct or egg-passage, whose office it is to convey it to the outer world, and on its way to clothe it with other structures needful for its development and preservation. It will be easily seen then that not unfrequently two yolks may become detached and enter the oviduct at nearly the same time, in which case they are very likely to be enveloped in the same white and shell, causing the "double egg" so well known to every poultry keeper. Thus received into the oviduct, the yolk becomes enveloped in a glary fluid called the white, or by chemists *albumen*. This is secreted by the mucous membrane of the oviduct, and added layer by layer as the egg passes on. These different layers can be easily seen, and even peeled off in succession when an egg is hard boiled. The uses of the white or albumen are manifold. It is eminently nutritious forming, indeed, the chief nourishment of the chick during its growth in the shell, as it becomes absorbed by the little animal, and forming, as it does, by far the greater part of the egg when laid, it gives the fast growing little body the needed increase of room ; it is a very bad conductor of heat, and hence guards the hatching against the fatal chills which would otherwise occur when the hen left the nest ; and finally it preserves the still more delicate and vital germ from concussion or other violent injury. The manner in which the last purpose is effected is very beautiful. Besides the ordinary white, two longitudinal cords or strings of much denser and even slightly fibrous albumen are found, which are easily distinguished if an egg be broken into a basin These cords are termed the *Chalazæ*, and are attached in a spiral form to the under side of the yolk, to which they, therefore, serve as ballast or weights, and always keep the germ uppermost, where it can best receive the heat from the setting hen. At a still further point of the oviduct, the egg becomes invested with the skin or parchment like covering which is formed inside the shell. In reality this skin consists of two layers, which can easily be separated ; and in fact at the large end of the egg they do separate entirely, forming what is commonly called the air bubble. How formed is still a mystery ; but it is an ascertained fact that the air in this bubble or chamber contains a far larger portion of oxygen than the atmosphere. At first the chamber does not exceed a quarter of an inch in diameter, but as the egg gets stale it becomes larger and larger, so that even in

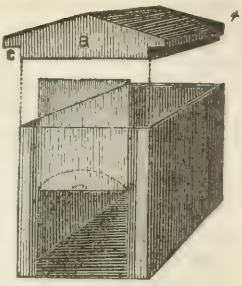
eggs stored it fills at length a large portion of the space within the shell, the egg itself drying up in proportion. In eggs on the point of hatching it usually occupies about one-fifth of the space. It has been conclusively proved by experiments that the perforation of this air-chamber, even by the point of a needle is an effectual prevention of succesful hatching. In the last portion of the oviduct, the egg becomes coated with that calcareous deposit which forms the shell, after which it passes into the cloaca and is ready for expulsion. In some breeds colouring matter is added to the solid ingredient, producing the deep-coloured eggs of the cochin, and in other birds the splashed and spotted patterns so well known. As already remarked, the white forms the principal nourishment of the chick whilst within the egg ; and we repeat this because the very opposite is the popular idea. Many believe it is the yolk which furnishes the food of the chick, whereas the fact is that up to about twenty-four hours before hatching the yolk suffers hardly any diminution At about that time it begins to be absorbed by the umbilicus or navel into the abdomen of the chicken, and is in fact a wonderful provision by which the newly hatched little animal is supplied gradually with the most highly nutritious food during the earlier stages of its existence. About the ninteenth day the beak of the chick ruptures the air bubble at the end of the egg, now become very much enlarged, and the chick for the first time breathes through the lungs. About the twenty-first day the chick breaks the shell by giving two or three sharp taps every now and then with a sharp-pointed scale provided for that purpose by the Creator at one end of its beak, and which in about two days after falls off. All eggs selected for hatching should be of the fair, ordinary size usually laid by the hen or pullet, rejecting not only the small ones, but also the very large ones. They should also be firm and smooth in the shell ; a very rough shell showing something wrong with the hen, and usually causing ill-success. Eggs unusually long, or, in fact differing much in any way from the usual character of those laid by that particular bird, should also be rejected.

Sitting hens do best, if each one can have a pen entirely to herself, where she can be left unmolested. A space of six feet by three will answer very well if furnished with a dust bath, but once a week or so, the hen should be allowed to stretch her legs for about three minutes, driving her back simply into her pen, and leaving her to go on the eggs herself. If she is thus let out first of all, and then fed in the pen, she will not remain longer than usual. Quiet hens do not need even this relaxation, but will simply come off, feed and dust themselves, and return ; in which case the eggs are far better left to them, only looking now and then to see none are broken. Several hens may be set in one larger pen, but in this case should be shut in and taken off one at a time in turn, else there will be danger of miscarriage, for hens in such circumstances have a perverse inclination to go on one another's nest instead of their own. The same must be done when the hens have to be set in the ordinary laying-house, which, for want of room, is constantly the case : they must be regularly taken off and let into the shed, or some other part of the run, and if possible the other fowls shut out till they have fed and returned, or they will not get their proper allowance, and may also be so driven about as to be too long in going back. If this cannot be done, the best plan is to take them off at such time that they can get their regular share of the breakfast with the other fowls ; but as a broody hen ought to have as much as she likes, and be, moreover, fed with grain only, this arrangement is not a good one, and she ought to be fed by herself, however she is set. When let alone in a special pen, food and water must be always left her, and the excrements be regularly removed ; but some hens would never come off at all if thus left. Some people have thought such sitters best, and have even encouraged their maternal solicitude by feeding on the nest. This practice is not only cruel, sometimes laming a bird for life, but actually injurious, the periodical cooling of the eggs while the hen is off acting an important part in causing an ingress of fresh air through the shell, and thus invigorating the embryo chick. Every hen, therefore, is to be taken off if she will not come, lifting her up gently by the wings, and taking especial care that none of her eggs are tucked up by them and withdrawn along with her. The proper size of a sitting-box for a cochin, or other equally large bird, is fourteen or fifteen inches square ; others in proportion. The hen must have ample room, and will then be much less likely to break the eggs in stepping in. We give three illustrations of a Hatching-box, furnished the *Canadian Poultry Chronicle*, by Col. Hassard, which we have often adopted to hatch and rear chickens

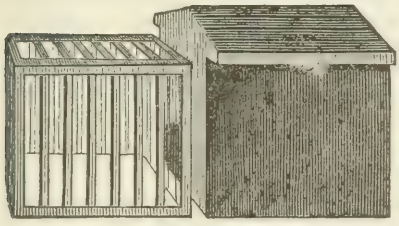
in, its simplicity being its chief recommendation. "Get," says the Colonel, "a large tea chest, A. Cut a hole, round or square, in the front of it, and nail two pieces of wood with a groove, or, easier still, nail two pieces, the one over the other, but the edge of one projecting $\frac{1}{4}$ of an inch over the other, and nail them on each side of the hole; they will form a groove for the door to slide in. To form the roof, cut two pieces of inch board in the form B, just to fit inside the chest, going in about one inch at C, and forming a projection or eave; nail some thin boards across these pieces, the edge overlapping, or you may board it straight, if you afterwards nail a piece of felt to keep out the wet. This roof lifts off under, so that a hen and eggs can be examined at any time, and the space between the boards and edge of the chest, when the roof is on, admits air. Then get some laths and construct a Cage D, to place in front of the door, and the apparatus is complete. Any old box and any old pieces of chests, a few laths (sawn ones are the best), a few nails, hammer and saw, and the coop may be constructed by any handy man. The hen is put on the eggs, and is generally shut in at night by letting down the sliding door. Place food and water in the outer cage in the morning, and you may go to your daily avocations, knowing that she will take care of herself, cannot get out, and will return to her eggs, and cannot be molested by other hens. And when the chickens are hatched, they live with the hen in the same coup, and, if allowed, will stick to it when she is in the poultry-house." For people in the bush settlements there is no better or cheaper plan of accommodating a hatching hen. Should any of the eggs during incubation get broken, the first night afterwards a bucket of water, heated to 105°, should be taken into the house, and the hen being lifted off to an adjoining nest, let all the eggs be placed in the pail. Then remove all dirty straw, and re-make the nest clean and comfortable, after which clean every soiled egg (still in the water) with a sponge or soft cloth, and when all are done replace the whole and the hen too. Examine the hen's breast, and if soiled clean it also. Only a moderate number of eggs should be set. For very early broods, seven are quite enough, and at regular seasons eleven are sufficient, except for very large hens. Setting too many often loses all, for the hen not being able to cover the outside ones, they get chilled, and as she changes the position of the eggs every day, this happens to nearly all in turn. Besides, in setting eggs, it is not only needful to consider how many the hen can safely hatch, but how many chicks she can brood when they begin to grow; else the weaker ones will be unable to get proper shelter and perish. In summer we can be less particular. Whatever be the number, every egg should be marked with ink, as some hens will lay eggs several days after beginning to sit, and these must be removed. Rather small hens—about six pounds weight—make the best sitters. Game, though smaller, stand in the very first class; so do moderate sized Dorkings. Dominiques, too, are excellent. Cochins and Brahmas make splendid sitters, from their tame and gentle disposition and ample feathering, and most barn-door fowls also sit well. At the expiration of six to eight days, the eggs should be examined by candle-light, as the unfertile ones can then be easily detected, and if the greater part be sterile time is saved, as the same hen may be at once set again. A new-laid egg, as is well known, appears clear and translucent when held between the eye and a candle. Barren eggs appear so still, even after being sat upon for a week; but the eggs which contain embryo chickens have a dark shadow in the centre, shading off to more transparency at the edges. The amount of shadow will vary with the time of incubation and size of the egg, and perfect opacity will not be found until nine or ten days have elapsed, even with good-sized eggs. The hen should not be absent from the nest more than half-an-hour, and in time of frost even twenty minutes will frequently addle



Cage D.



Tea Chest A.



Hatching Box Complete.

the eggs, unless set in a very warm place. Eggs are much more liable to this misfortune during the early stages, than when they have been sat upon twelve or fourteen days. It may also save much heart-burning and groundless suspicion of egg vendors, when a nest of purchased eggs fails, to say that if eggs at the end of the period when broken explode, or are decomposed, or changed in colour in any way, the eggs have been fertile and begun to hatch, but have been chilled, or otherwise had their vitality destroyed during the process. Barren eggs *remain a clear yellow* to the last, and only emit a very strong *musty* smell. The eggs of ordinary poultry require, as a rule, twenty-one days to hatch ; but this is by no means a universal rule. Cold weather will lengthen the time a day or more, while warm weather and an attentive sitter will hasten it. Stale eggs also hatch later than fresh. Hamburghs generally hatch at the expiration of the twentieth day, and Game Bantams often even on the nineteenth. Turkey eggs require from twenty-six to twenty-nine days, guinea fowl twenty-five to twenty-six, and pea fowl twenty eight to thirty days. Pheasants hatch on the twenty-fourth or twenty-fifth day, and partridges the same. Ducks hatch on the twenty eighth day, and geese on the thirtieth. A day or two before the eggs are "due," all which will hatch can readily be known by taking a large bucket filled with water heated to 105°, and immersing them in it. In a few minutes—not always at first—the "live" eggs will commence bobbing about in a very curious manner, from the efforts of the chick within. The eggs may be left to soak in the warm water for ten minutes with marked effect on the hatching. The eggs should be put under the hen whilst still wet.

VI.—Rearing of Chickens.

Chickens require neither food nor drink on the day on which they are hatched; they not only derive no benefit from it, but in fact both are injurious. At their entrance into the world they are provided by Nature with the yolk of the egg almost entire, for their immediate sustenance, and this is the only food they either need or ought to have. Even twenty-four hours' abstinence will not have the slightest prejudicial effect, but any time between which occurs conveniently may be chosen for the first meal, and till that time arrives it is best if they can be left with the hen entirely undisturbed. Many persons take away those first hatched and put them in flannel by the fire, restoring them to the hen when all are out ; and if the eggs have varied much in age, this procedure becomes a necessity, as the staler eggs not hatching till hours after the others, the hen would become too restless to remain with them, were the earlier chickens left with her. But it is better, if it can be done, to leave the chicks with their mother: the heat of the living body appears to have an actual nourishing effect, a vital power which no artificial warmth can possess, and when the little creatures have been under a hen, they never seem so happy and contented away from her. It is, however, necessary to visit the nest now and then, and take away all the empty shells, which would otherwise cause great discomfort to the chickens. The first food of young chickens should consist of eggs boiled hard and chopped up, mixed with double its bulk of bread crumbs, and the whole slightly moistened with milk. The hen, also, should be allowed to partake of this, giving her first, however, as much barley and water as she chooses to partake of. The practice, formerly so common, of removing by the thumb-nail the sharp and horny scale which is found in every newly-hatched chicken's beak, and by means of which it breaks the shell, is simply the barbarity of ignorance. Except in very rare cases of excessive debility, to open their beaks, and put either peppercorns or food down their throats, is little better. If anything comes naturally to animals of every kind, it is the faculty of eating ; and the attempt to teach this to creatures in ordinary health and spirits is somewhat akin to the instructions of an elderly relative in the art of oval suction. Chickens generally eat very little, and often drink nothing at all during the first day ; and provided they only be fairly strong upon their legs, and look tolerably lively, they both may and should be left to their own natural instincts. For all weakly chickens, raw egg beaten up alone or with milk, or mixed with their food instead of milk, should be given. A little underdone meat, chopped fine, is greatly enjoyed by all chickens, and is of very great benefit to them. If the weather admit of it, the hen should be cooped out after the first twenty-four hours ; but, if not, she must be kept in a shed protected from the weather, until the chickens are better

able to bear the cold. There should, if possible, be a grass plot in front of the shed. Chickens can be reared without it, but nothing is so much in favour of growth, appetite and vigorous health, as even a small grass plot where it can be obtained. If grass cannot be had, lettuce, chopped fine and mixed with their food, is the best substitute. After a day or two, the chopped egg and bread crumb will have to be discontinued, and the chicks placed upon regular diet. Ground oats, made into crumbly dough, is the very best; coarse oatmeal comes next, mixed with about one-third of barley meal, oatmeal alone being rather too dry—bread crumbs are equally good to mix with the oatmeal. For a little while, at least, the food should be mixed with milk instead of water, and a little meat of some kind every day. For early chickens, new milk warmed given to drink early in the morning, has a wonderful effect in bringing them through cold weather, and they get very fond of it; but neither this nor the food must be left so long as to become sour, which it will soon do, and, if so, cause serious trouble. After a few days, grain of some kind must be given, and we have found wheat screenings much relished by them; indeed, when procurable, we use it as a staple food, but as the little beaks become stronger coarser grains may be substituted. The one great success in rearing fine chickens is:—Give food so as to fully satisfy their appetites, and no more. This rule is quite different from that laid down for adult fowls. It is broken if the chickens are left so long as to really hunger for their food; it is equally broken if so much is given as to be left after the brood is satisfied. Just so much is to be thrown down as will be fully cleared away, leaving none to be trodden into the ground. In the first week, every two hours will do, then for a month every three hours, and after that four times daily, for the times of supply; but something will depend upon the season, and in early spring they will need to be fed more frequently during the early stages of growth, and also again better diet. At ordinary seasons, mixing all the food with plain milk and giving a little meat daily, is infinitely more wholesome diet than custard, so frequently recommended. In the country where milk is plentiful and cheap, a good substitute for custard is to be found in curd formed by adding a little alum to a quart of new milk and squeezed dry—it will be eagerly devoured by chickens. At a period varying from four to ten weeks, the hen will discard her young charges; and at this time they will want special attention, if they are not to suffer by the deprivation of her care. Chickens of the smaller breeds may be allowed to occupy a perch in the accustomed house or shed in which the hen will roost for a few nights, brooding them under her wings, before finally leaving them. Large breeds should not be allowed to roost before they are six months old—this prevents crooked breasts. Cockerels must be separated from the pullets at the age of about ten or twelve weeks, and only chickens of the same age be placed in a run together. Without separating the sexes, the birds will never grow so large. The birds under the treatment described are growing fast now, and they must be fed liberally and well—just enough to satisfy them, and none left—mixed nice and dry, and thrown about the grass, if that be at command, or put in clean vessels, if not; their water kept clean and frequently changed; and some animal food occasionally given to all, except pullets, which it is not desired should lay early. Milk may be still mixed with their food and given to drink even up to six months old, if the range be good; but for birds in confinement, it should be discontinued after about three months, being in such circumstances too much for the more sluggish digestive organs.

The superintendent of the Right Hon. Lady Gwydyr's poultry yards, Mr. Fred. Wragg, relates his method of feeding young chickens as follows:—"In giving my system of feeding it will be well to commence from the shell. I very seldom remove the chickens from the hatching-nest until they are twenty-four hours old; they are much stronger when thus left with the hen. I have large sheds, under which I coop the hens with chickens: they are six feet high in front, sloping backwards, the back being two feet from the ground, and close boarded: one end which receives the cold winds also close boarded, and the other end and front open; the roof covered with zinc. The ground under the shed is loose gravel, run over every morning with a small-toothed rake; outside the sheds is grass. Under these sheds I put several coops of chickens, and I scarcely ever lose a chick, be it ever so early in the year. The zinc roof answers admirably; when the sun gets out even in the coldest weather, the warmth on the ground reflected from the zinc causes the little things to be full of life, and very seldom troubled with cramps, a complaint so fatal to

very many early hatched chickens. We will now consider the chickens safely cooped out; and now comes the feeding, which has been the downfall of many, and about which so much has been said and written. My plan is as follows:—If early hatched, the first thing I give them is warm milk in a shallow plate or tea saucer. I then have an egg boiled hard, and bread crumbled and chopped up with the egg; give a little of this every hour or so. If you have a rice pudding for your dinner do not forget to save a little for the chicks, and give it to them while it is warm. Small bits of meat and suet pudding from the table are very much relished, and give them strength. The nights being very long they must be fed by candle-light, which they will readily do after they get accustomed to it. When the chickens are a week old, and have got nice and strong, leave off the eggs entirely, and give oatmeal well boiled; mix it with dry meal until you can crumble it with your thumb and fingers; this will bring them on better than any thing. Get some wheat also, and have it split up; they are very fond of this. The first thing in the morning give them warm milk to drink, the rest of the day clean water. Warm milk is only necessary for early hatched chickens until they are five or six weeks old. When arrived at this age avoid feeding too often. How often do you hear it said, 'you cannot feed them too often;' but I say you *can*: the little things get surfeited, and refuse to feed altogether. If it is light at six o'clock in the morning, be up and doing. If the oatmeal is boiled the night before, and left on the hob, it will be easily warmed the next morning: if it is dried up, break some on a plate and pour a little warm milk on it. Give them as much as they will eat of this, and after seeing that they have fresh water in the pan, do not go near them for three hours, and then take some broken-up wheat, and you will find them ready to meet you; and you will soon see by the way they pitch into it that they are hungry, and mean to fill themselves. Never forget the scraps from the table, and let the last meal at night be oatmeal, mixed with Indian meal, boiled. If they have grown as they ought to do, at two months old they are ready to take from the hen, and if the weather is at all open the chickens will do better without the hen. My advice is, never feed now more than four times a day. My plan is as follows:—I have the chickens out as soon as it is daylight, and they have an hour's ranging about to get them in order for their first meal. While they are roving about I have the fire made up, and a large saucepan full of water put on; I then go in the food room and put the meals together. I have a large zinc pan, and I put equal quantities of fine middlings, Indian meal, barley meal, and the best ground oats, and a complement of coarse bran. I sift all the meals well through my fingers. I then hollow out the middle and pour in the boiling water, and with a trowel I thoroughly mix it into a thick, crumbly mass. When mixed I press it into lumps the size of a cricket ball, put them into a zinc bucket or pail, and go round the lot generally about six o'clock. I give a whistle at certain places where I feed, and they come flying and running in all directions. I always stand throwing them lumps until they have had enough and begin to walk away. I follow the same plan with the next lot, until they have finished; the chickens take me about one hour. I then go through the old stock with the same food, and when these have done I am in good order for my own breakfast. While I am feeding the stock I have a man going round rinsing all the drinking pans out, and putting in fresh clean water; this will take him until breakfast time. His next work is to remove all the coops, raking up the dirt that has been made during the day and night previous. It is much the best to coop hens on gravel near grass-run, so placed as to catch the early sun; but when the sun is hot and bright turn the coops with their backs to the sun. Let the pans with water be carefully screened from the sun. The man's next duty is to attend to the old birds, cleaning out the roosts, shaking up the straw that is placed in one end of the roosts for heavy birds, such as Cochins and Brahmas, to sleep on; the yards are also carefully raked over. When this is done a few fresh-pulled lettuce or cabbage leaves are thrown down in each run, or what is better, tied up on the side partition of the yard. From ten to eleven o'clock I go round the chickens with wheat, changing it once or twice a week for hemp-seed. At noon the man has to go round with fresh clean water. From three to four o'clock in the afternoon is my feeding time, being soft warm food same as the morning, adding at times a saucepanful of boiled rice boiled in skim milk. If the sides of the saucepan be rubbed with a lump of suet, the rice when properly boiled—that is, when the rice is on the point of bursting—will all come clean away from the saucepan. Take and turn it out in your mixing-pan, and mix it well up

with fine middlings. Feed the chickens on this; there is nothing they like better, and you can almost see them grow; and this feed keeps away the "scours," which I am scarcely ever troubled with. When the chickens are returning for the night to roost, go round them with wheat or broken-up maize, throwing them a few handfuls, but standing while they eat it, and carefully avoid giving them any more than they will eat. While they are eating you can count them over to see they are all there. If you can put in each of the chicken runs a heap of burnt oyster-shells broken up, and broken bones, the chickens will thrive all the better, and be seldom troubled with leg-weakness. If you can give them now and then a barrow-load of lettuce, if they have ever such a grass-run they will eat it, and nothing can be better for them. My old stock are fed in the morning on the same food as chickens, the latter being served the first. In the middle of the day the stock have a little wheat; in the evening they are generally fed on small maize. I may and that I always mix the food and attend to the feeding myself, and I think it the duty of any superintendent of a prize poultry establishment to do the same. By so doing I can see at once if a chicken refuses to eat, or has met with an accident, and by prompt attention they are soon set right again; where an assistant would in nine cases out of ten never notice anything until the chicken was past recovery. Then again there is no estimating how much food is saved by doing it yourself. The above system of feeding and management of chickens I have proved to be satisfactory: their growth and condition being all that could be desired."

Mr. Wragg's own experience refers chiefly to the Asiatic breeds; but the general principle to be observed in the feeding of all breeds is the same, and his last remark relative to the saving in food by careful feeding, is particularly worthy of attention. There is, however, one ingredient in chicken feeding, which deserves special notice, being of the greatest assistance to those whose space is limited. We allude to the bone-dust, or ground dry bones. It is not pretended that the bone-dust is of any special assistance to those who have at command unlimited grass range over a good soil, or to those who rear chiefly small but hardy breeds. Neither of these require it, though even then its use usually affords some benefit with no trouble and little expense. But to weakly breeds, especially such as suffer by leg-weakness, it is of the greatest service; and to such as wish to rear large breeds in a limited space, it is the most valuable aid with which we are acquainted. Its effects are—1, to supply abundance of bone-making material: 2, to counteract any tendency to diarrhœa, causing the excrements to assume that firm character denotive of perfect health; and 3, greatly to postpone what poultry men call "setting," or maturity, and thus ensure a longer period of growth on which ultimate size so greatly depends. Being ground up whole, a fair amount of animal food is also contained in the bone-dust. For mixing in poultry food it should be on an average a out the fineness of coarse oatmeal. In small yards, as already stated, cut grass must be liberally supplied as well as to the mixture; and on such food the birds will grow wonderfully, and acquire a constitution which, in confiement, they would never be able to attain in any other way. Burnt bones powdered have not by any means the same effect, being reduced to mere phosphate of lime, with some amount of animal charcoal; neither have crushed raw bones, which have been stated by some to produce similar results. On the contrary, raw bones have been proved by the very simplest test of experiment to hasten laying in the pullets, and "furnishing" or feathering out to maturity in the cockerels, as might be expected from the quality of fresh jelly they contain—hence while excellent in moderation for laying stock, or during a limited time to prepare cockerels for actual exhibition, they are not adapted for the regular food of chickens, whose period of maturity the breeder for exhibition rather desires to postpone.

The judicious use of stimulants or spices is of the greatest service. On very cold or wet days they often have a marked effect in preventing or obviating ill effects, especially in early broods. The *rationale* of such use is obvious, being strictly in the nature of medicine rather than of food; but as a regular diet they cannot be recommended. For the use of those who may desire to prepare something of the kind for themselves, we give the following as *recipes*, which have been tried and found to do good service:—

	oz.
1. Liquorice	2
Ginger	2
Cayenne pepper	1
Aniseed	½
Pimento	2
Sulphate of iron	1

Powder and mix.

	oz.
2. Cassia bark	1½
Ginger	5
Gentian	½
Aniseed	½
Carbonate of iron	2½

Powder and mix.

	oz.
3. Peruvian bark	2
Citrate of iron	1
Gentian	1
Pimento	2
Cayenne	1

Powder and mix.

	oz
4. Cascarilla bark	2
Aniseed	½
Pimento	1
Malt dust	2
Carbonate of iron	1

Powder and mix.

The first powder is chiefly adapted for a sudden cold. The second will be found excellent as a tonic in wet or cold weather, or for young turkeys, being the recipe of Mr. Mills, a French apothecary, which has been well tested. The two last are also tonics; the last, or one something like it, being preferable for more continuous use when required, or in preparing fowls for exhibition. As a restorative after return from exhibition we would prefer No. 3. The No. 4 recipe may be mixed with sugar at discretion, in the proportion of three parts good sugar to one of powder; this addition will assist in making weight, and is liked by the fowls, but too raw a quality must not be used or purging will be the result. In using either of these condiments otherwise, enough should be added to the soft food to give a slight characteristic taste and no more, except for special occasions, when it is better to mix about as much as will lie on a ten cent piece, with a small bolus of meal and butter, and give as a large pill. Another most valuable tonic is "Parrish's Chemical Food," a syrup of phosphate, prepared according to the formula of Mr. Edward Parrish, of Philadelphia, which is every day becoming more valued.

As the home chickens grow large enough to leave their mother, it is of importance that the knowledge of their origin be preserved. In many cases, where attention is given to the fowls the memory alone may be trusted to ensure this, as every individual chicken out of even a hundred may be easily recognised by a real amateur, who takes an interest in them; but usually some kind of permanent mark becomes necessary. Some cut a small nick on the bill, and others punch small holes through the web between the toes; but both these methods, if at all conspicuous, of course proportionately disfigure the bird. By far the best plan is to extend the wing of the chicken when a triangular web of mere skin will be found between it and the shoulder, which can be pierced in an instant by a stout, red-hot knitting-needle. This method may be thought cruel; the pain appears to be only momentary, and the part almost devoid of feeling, for after the instant which it occupies the chick appears to take no notice whatever. The needle should go through with a single swift "pecking" kind of movement; and by piercing one, two or more holes thus—. : ∴ ∵ :: Any desired distinction may be observed, especially as they can be made on either the right or left wing. These marks are permanent.

VII.—Feeding and General Treatment of Fowls.

In rearing fowls with any prospect of profit, a correct system of feeding is of the first importance; scientifically and practically, the principle should be understood and carried out. The purposes served by food when taken into the body are of several distinct kinds: there is the production of animal warmth, the provision for the growth and waste of the body; the supply of mineral materials for the bones, and saline substances for the blood; and, lastly, the supply of fat. It is obvious then, that a proper system of feeding is essential to successful poultry-keeping. If treated rightly, the domestic fowl is the most profitable of all live stock; but that it is seldom treated rightly we are yearly more and more convinced. People seem to think that if they only read sound directions,

their fowls must thrive ; and the amount of ignorance regarding poultry and their proper treatment is amazing. The feeding of any live stock is a very simple, but at the same time by no means an easy problem. All food given represents cash expended, and this is easily enough calculated, but the result is not so readily seen without thought. Food may be productive, yielding more than its own value ; or it may be simply wasted, producing nothing whatever ; or it may be actually injurious to the animal, every cent expended producing so much actual loss. Thus in case of fowls, the food may either yield a return, part repairing the waste of the animal tissues, and part producing extra growth and weight, or valuable eggs ; or, it may simply maintain the bird in the same state or condition it was before ; or it may produce unhealthy fat, and thus be really injurious. And as every living creature requires some amount of food to support its life and energies, such amount obviously represent the *minimum* which can be given; and the question really is, what result is obtained by all food given over and above it. It is that surplus which, in the way we have seen, may be either productive, simply inoperative, or actually prejudicial. These things may seem truisms, but their right understanding will greatly pave the way to success in practice. We need not stop to prove that as an egg contains animal food in its most concentrated natural form—a fact well known to all physicians—its regular production must demand a regular and sufficient supply of food adapted to produce it. There is a wonderful difference between the appetites of hens which are not laying and those which are, or are about to commence. Hence, the starving system of feeding poultry can never afford any return ; and fowls which are only allowed to eat "what they pick up" rarely produce anything worth speaking of. At harvest season and when fowls are allowed their liberty it may be different ; but as a rule, chance feeding will always result in very chance receipts, added to which birds thus left to forage for themselves will in many cases lay away where their eggs can never be found. But among fanciers the mistake is in general the other way. Farmers' fowls get far too little, fanciers mostly the reverse. They get fat ; and a fat hen is never a good layer, while a pampered male bird is lazy, if not altogether useless for purposes of breeding. As regards the nature of the food to be given also, there is little sound knowledge upon the subject amongst most who keep poultry. Grain is certainly the natural food of fowls ; but so is grass, so are worms ; and it would be as reasonable to feed birds in confinement exclusively on either of them as on grain alone. Moreover, a fowl in its state of nature lives under altogether different conditions. It is only intended to lay some dozen or so eggs in a season, whereas we wish to get about ten times that number. The wild fowl, again, finds its own food grain by grain ; and that everlasting mill called the gizzard, called into incessant action, always reduces the grain as swallowed, so that the crop is rarely if ever distended. The bird has literally to work, and work hard, for all it finds ; so that all its functions are kept in the most vigorous exercise. Under such conditions, with the grass and worms it also picks up the grains or seeds which form its principal food and maintain the creature in the highest health and condition ; though as we have seen, the egg production is not such as would yield a profit to the poultry-keeper. These things again are truisms ; but we repeat them because we constantly find persons who are for "following nature ;" and the theory has a certain plausibility if not exposed. If we "follow nature," we must follow her altogether, and we must be content with natural results, which in this case would be one nest of eggs per annum ; if we are to keep them in confine ment, and to get many times the number of eggs, we must change our diet accordingly. No fowls at most require more than three meals per day, and as a rule do far better with two. The first should, or in confinement must, consist of soft or pulpy food of some kind, and be given early in the morning. If the fowls be at liberty or have large grass-runs, they should have nothing further until about half an hour before they go to roost, when they should have another feed of grain. In point of quantity no fixed scale can be given ; some breeds eat double the quantity of others, and even the same hen will require very different allowance, according as she is laying or not at the time. Nevertheless there is a rule simple and easily understood, which will unfailingly secure both health and eggs ; and that is to give the birds just as much as they will eat with an eager or ravenous appetite, and no more. We are speaking now of adult fowls, and such must on no account be allowed to have as much as they will eat ; directly they cease to run if the food is thrown to them, or commence "picking it over," if given in a trough or saucer, it should be stop-

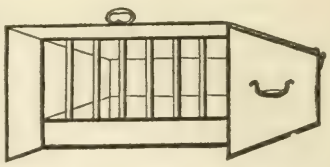
ped or taken away. On no account especially must any be left. While no absolute scale can be given, for the reasons stated, it will be generally found that hens of large breeds when laying or moulting, require about as much meal or dough as would make a ball two and a half inches in diameter for their feed every morning, and a woman's handful (we mean to be taken with the palm downwards) of grain at night. Indeed for large breeds this "handful" system will generally be a safe one as regards the grain; but smaller fowls, from Spanish downwards, should have rather less according to size. But the only real rule is that we have given above, and we would add the caution that many on trial will not think it enough. In bad or cold weather, or when moulting, a very little more may be allowed; but birds (we speak of adults only) should never be allowed to eat to repletion. Such will always destroy the profits of poultry-keeping at least in a confined space. Even in strict confinement, where every atom of food must be supplied, there should not be a third regular meal, but simply a small handful of grain among every two or three birds, according to their size, to afford them gratification and keep the appetite alive. Occasionally in such circumstances, the diet may be varied by giving the handful each of grain in the middle of the day; and then, instead of corn, giving a very scanty feed of soft food, not more than half the breakfast the last thing at night. In choosing food, either meal or grain, there is considerable variety to select from, and it is well now and then to give a change. In arranging this the poultry-keeper should be guided by the value in different ingredients of the various foods, for which purpose we reproduce the following table showing the various foods in the order of their richness in the nitrogenous or flesh-forming substances:—

There is in every 100 parts by weight of.	Flesh-forming Material, viz., Gluten, &c.	Warmth giving and Fattening Material, viz.		Bone-Making Materials, or Mineral Substances.	Husk or Fibre.	Water.
		Fat or Oil.	Starch.			
Beans and Peas	25	2	48	2	8	15
Oatmeal	18	6	63	2	2	9
Middlings, Thirds, or Fine Sharps	18	6	53	5	4	14
Oats	15	6	47	2	20	10
Wheat	12	3	70	2	1	12
Buckwheat	12	6	58	1½	11	11½
Barley	11	2	60	2	14	11
Indian Corn	11	8	65	1	5	10
Hempseed	10	21	45	2	14	8
Rice	7	A Trace.	80	A Trace.	..	13
Potatoes	6½		41	2	..	50½
Milk	4½	3	5	¾	...	86¾

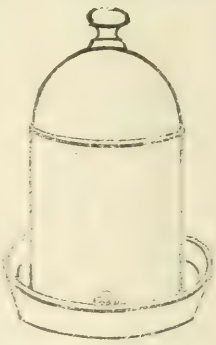
It will be seen that there are several substances often used as food for poultry, which by this table are shown to be comparatively worthless. Rice, for instance, contains less than half the flesh or egg forming material of several other grains, and is useless; except when mixed with milk for the purpose of fattening fowls, it never pays to use rice as the food of laying fowls. It will also be seen that potatoes form very poor nourishment, and should never be given except combined with other food rich in flesh formers. What then should be the staple food? With regard to grain, we prefer buckwheat as a staple to any other, but generally it is too expensive and can only be used occasionally. We often see it stated that it is not good food; this is not the case. All fowls become very fond of it as soon as they get to recognize its strange colour; and the fact that the French, who send such immense quantities of eggs, and even poultry to the English markets, use buckwheat almost exclusively, both to feed and fatten, is alone enough to dispose of such absurd prejudices. Next to buckwheat in value stands wheat screenings, the small wheat unfit for grinding into flour, now very generally used. When we first commenced poultry-keeping, nearly a score years ago, wheat screenings could be obtained in almost any quantities, at fifty cents per 100lbs, now we pay double that price, and so great is the demand for it, that we cannot procure sufficient for our wants even at

that price. Good barley-meal comes next, and then oats. Indian corn must be used, if at all, very sparingly indeed, on account of its tendency to make fat. We lay great stress on this caution, because it is a very favourite food, and the birds eat it greedily. Light framed breeds, such as Spanish or Hamburgs, may have it in moderation, and even larger fowls may get it as an occasional change ; but Asiatic breeds, especially if kept in confinement, should not be regularly fed upon it, or fat instead of eggs will be the an most invariable result. Damaged grain or corn occasionally advertized, unless the damage is very slight indeed, will inevitably prove a losing speculation, besides occasionally poisoning the fowls. Small white peas may be given occasionally with great benefit, provided the fowls will eat them, which they will generally, but not always, do. For an occasional change, barley may be steeped in water, and left till it has sprouted a little, in which state it is greedily devoured by the fowls ; but this must not be continued very long. Brewers' grains, if fresh and good, may be given with advantage once or twice a week in winter, rather sparingly, as a mid-day feed. Merely to keep adult fowls in health and good condition, they do not even in confinement require animal food ; but if a regular supply of eggs be desired, birds penned up must have this. It is not to be made a regular meal of, and in ordinary households the kitchen scraps will furnish ample supply. If this be not sufficient, bullock's liver well boiled, chopped up and slightly seasoned with pepper and salt, will be the cheapest and best material generally, but sheeps' pluck, or other parts of various animals are equally good. The quantity to each hen should be about a cubic inch daily, in winter ; in summer less, or it may be even discontinued, with little loss, at that time. The broth obtained from boiling the meat should always be used, so far as it will go in mixing the food. Some meat thus given, even every other day, will make a considerable difference to the number of eggs in winter time, and in getting birds through the moult. Fowls with good range need no animal food whatever, except in winter, when the ground is frozen ; at this time they cannot procure insect food for themselves, and which, in the summer, form the most natural source of supply.

The proper mixing of soft food is important as well as the best material for making it. Ground oats, if it can be obtained, will make the best standard soft food, barley-meal and shorts, mixed in equal portions will make an excellent food, varied very rarely with at least an equal weight of shorts alone. Now and then turnips, beet, or mangold-wortzel boiled in as small a quantity of water as possible may be mashed and mixed with shorts, and given to great advantage, or may be used as a permanent diet. Oatmeal may be used at discretion if only cheap enough, or mixed with barley-meal which latter is also very good by itself when shorts cannot be had ; but it is better mixed with the latter when possible. Soft food should be well mixed and not too wet or sloppy ; it should never be given in a sticky, porridgy mass, which clings round the beaks of the fowls. Such feeding often causes diarrhœa, and in any case will rarely produce a proper egg-return. As a rule soft food must be so mixed that while none of the meal be left in powder or dry, the whole will be so fine and "short" that a mass of it will break and crumble if thrown upon the ground. All meal can be mixed this way if properly done, which is by stirring the water first well in with a spoon or stick, till all becomes apparently too dry to mix thoroughly, and then kneading and squeezing it together with the hands. Food so mixed does twice the good for the simple reasons that it is both more wholesome in itself and more enjoyed. Meal combined with turnips or potatoes need not be mixed quite so dry ; but all soft food, rightly prepared, will be hard enough to be rolled out with a roller into a sheet, if required. Potatoes and shorts should always be given warm ; and whenever meal is prepared with water, we should advise it being mixed boiling hot. The warmth greatly promotes health and laying, especially in cold weather ; and the food being a little swelled, and in fact really half cooked before eaten, it goes further and produces less excrement. How the soft food is given will depend on circumstances. Supposing a yard to be tolerably clean and dry, it will be best to scatter it freely over the ground. Properly mixed, very little dirt will stick to it, and every bird will get its share. In wet weather and where birds are confined in a shed this will not do. In such cases any common dish will do to put the food in, the quantity which the fowls will eat with proper appetite having been found by previous observation. The accompanying engraving will show a feeding cage which will be found useful



when birds have to be altogether confined and fed upon a floor of dry rubbish ; but for fowls fed with proper appetite in open yards will not be needed. The front wires should be about eight inches in height. The last requisite in the shape of diet is a regular supply of green food. Here again, fowls kept on grass will need no attention ; but for birds penned up the daily provision of it is an absolute necessity, though most beginners are ignorant of it. Grass may be cut fine with a shears or mac.. .e and mixed with the soft food, when the birds must eat their regular portion. Next to grass cabbages or lettuces will be best. A capital plan is to hang up a whole cabbage .n the shed by a string, about six inches from the ground, which will afford the fowls not only the feed they need, but great amusement and occupation. A beet or mangold cut in half may be served in a similar manner, but in all these cases the refuse must be regularly cleared away. It is not a good plan to keep fowls and ducks in the same yard ; but being sometimes unavoidable, it is well to know how to feed either class of poultry independent of the other. Fowls are very easily fed by laying a few boards about two feet high on barrels or some other stand ; the ducks rarely attempting to fly as the fowls do. In feeding the ducks, on the other hand, a large flat pan should be procured and a couple of bricks laid in the middle to keep the food round the edges. Then a large box or tub should be turned over the pan, and supported by a brick at each corner. This method depends upon the flexibility of the duck's neck, which enables it to pass its head under the tub and feed itself out of the pan, while the fowls can get nothing. Except in certain cases of disease which require stinting, fowls must never be without water : and this must be so provided that it may be kept cool and clean. For this reason, when the fountain or trough has to be placed in a shed, it should be placed two or three inches above the sand or gravel. In ordinary weather the water, if clean, need only be changed every two days, provided it lasts so long ; but in summer it must be filled up at least daily, and kept in the shade. Stale, sun-warm water is often fatal to fowls, leading to cholera and other diseases. We give an illustration of a very cheap and convenieut contrivance of a drinking fountain made out of an earthenware jar, and an ordinary glazed flower pot saucer, by boring a small hole an inch and a-half from the edge. When required for use the jar is to be filled with water, and the saucer placed, bottom upwards, on the top. Both together are then turned quickly over, when the water will be found to flow in to the saucer to the same height as the hole in the side of the jar. The advantage of this eonstruction is that the green slime which always collects by degrees, and all other offensive matter can be perfectly cleaned off whenever necessary. In winter the fountain should be carefully emptied every night to prevent frost, or if already frozen, be brought into the house to thaw, as fowls require to drink the first thing every morning. Snow must on no account be allowed to fall into the fountains, for in any quantity it has the singular property of reducing the birds in flesh and condition so that they become mere skeletons. The water should, therefore, be placed under shelter. To keep the water from freezing during very severe weather in day time, the following plan will be found to answer the purpose perfectly. In a tub or half barrel place a large bottle slantwise, so that the mouth of the bottle will be close to a notch cut in the rim of the tub. The bottle must be fixed in position by a few slips of wood nailed, and the tub then filled tightly with horse litter and manure, nailing more slips across the top of the tub to keep it in. When all is prepared, fill the bottle with water and cork it, after which invert the whole, slipping, at same time, a pan under the mouth of the bottle, and withdraw the cork. The heat of the manure will remain for days, and keep the water from freezing, especially if put in the sun, unless the weather is very cold indeed. Of course, whenever the heat of the manure becomes exhausted, the tub must be emptied and fresh filled ; and every night the bottle must be allowed to empty itself, being re-filled in the morning. During ordinary frosty weather pans are better than fountains, as a slight greasing will entirely prevent the ice adhering to them, and save all trouble beyond filling when required. In very



cold or wet weather, it is well to add some iron to the water. Sulphate of iron alone becomes rusty, and disliked by the fowls, but a drop or two of sulphuric acid added will prevent this. A lump of sulphate of iron, the size of a filbert, and three drops of acid, will be enough for each gallon of water, or a teaspoonful of the tincture of iron will answer as well. One or the other should always be used during moulting time, as it helps the fowls greatly through what to them is the most critical period of the year. At that season, also, the food should be especially looked after, and a little hempseed given two or three times a week is very beneficial. A little extra meal, however, is always beneficial at such seasons, and has another effect in the earlier commencement of laying. It only remains to add, that fowls require some regular supply of lime, and also of gravel or small stones. The one is needed to form the egg-shells, the other to assist the gizzard. Old mortar will answer both purposes, and burnt, pulverized oyster shells are also good. Fowls, as is well known, clean themselves by rolling in dry earth or dust, and this must be afforded them, however confined the space. A shallow box of wood ashes or dry earth must be placed in a corner for them ; and it is beneficial to mix a few pounds of black sulphur with the contents of the box. When this is properly attended to, and the house cleaned out every two days or so, there will usually be little trouble from vermin ; but if these do appear, carbolic acid is the best remedy. In washing the walls, the best strength will be three ounces of the acid in crystals, dissolved in three gallons of lime water. This will be certain death to all insects in the house itself, and the fowls themselves are to be dipped in a solution of one part carbolic acid to sixty parts water, long enough to soak them, after which they should be put by the fire to dry. Another excellent preparation for use in poultry-houses is carbolate of lime. This is both a powerful and pleasant disinfectant, whilst it will also destroy insects if dusted liberally on the floor and against the walls. Being a dry powder it may also be dusted in nests among the straw, where a wash cannot be used, and employed in this way is far more effective than sulphur. The importance of securing eggs in the winter we have already hinted at. The early-hatched pullets will need no particular treatment as regards this, beyond giving them, as the fall season advances, a moderate allowance of animal food in cases where no grass run is at hand to afford it naturally ; but the laying of the last year's hens will depend much upon judicious management. Hens which lay late into the fall, cannot be reasonably expected to recommence till late in the new year, especially if the moult has found them producing eggs, in which case several of best laying breeds will continue till the process is nearly completed, and by this double drain so exhaust the system that they literally cannot recommence production till February or March. The best way of preventing this is to allow each hen, as she becomes broody in the fall, either to hatch and rear a brood, or sit on the nest for six weeks. Either plan will hasten the moult and next year's production of eggs as well ; and a young brood will give no trouble in rearing if ducklings be chosen, which may be fit to kill in ten or twelve weeks, and thus save the loss of the hen's time.

VIII.—Diseases of Poultry.

Poultry, like other animals, have their complaints and diseases, the successful treatment of which requires skill on the part of the operator, and a practical knowledge of the management of fowls generally. If fowls are kept clean, and well sheltered from the cold and wet ; are not over-fed, and have a due proportion of both soft and green food, with a never-failing supply of clean water, they will remain free from disease, unless infected by strangers. To "cook" a sick fowl is, perhaps, one of the most difficult operations a poultry-keeper has to undertake, except the acquirement of the knowledge how to do it. Until very recently, no well-defined rules, by which diseases in fowls could be treated systematically and medicinally, were laid down. To Mr. W. B. Tegetmeier, the poultry world is indebted to the first successful attempt in this direction. Since then other writers have added much practical information on the same subject. The best cure, in nearly every case, is to kill a fowl when it becomes ill before it is too bad to be eaten : it is only in case of valuable birds, which people are unwilling to sacrifice, that an attempt at cure ought to be made. Nevertheless, there are many diseases which heretofore were looked upon as incurable, now but little known in poultry yards ; care and attention,

on the part of the owner, with a proper knowledge of the dietary scale, prevents the ap pearance of many maladies.

Gapes.—This disease is occasioned by the occurrence of a parasite (*Sclerostoma syngamus)* in the trachea or windpipe of the chicken. As early as the year 1797, Dr. Weisenthal, Professor of Anatomy at Baltimore, in the State of Maryland, fully described this disease. Later investigators differ from him only in the form of the worm. The name of the worm is sufficiently expressive of the disease. The extension of the neck, and consequent elongation of the trachea caused by gaping, seems to have the effect of separating or unfolding the knot of enclosed parasites—sufficiently, at least, to allow of a certain degree of expiration, and hence the cause of the gaping and inspiration. The following treatment is recommended by Mr. Tegetmeier:—"Strip the vane from a small quill feather, except half an inch at its extremity; this should then be dipped in spirits of turpentine, and, the chicken being securely held by an assistant, the feather so prepared is passed neatly down through the small opening of the windpipe, which is readily seen at the base of the tongue. The turpentine at once kills the parasites, and its application excites a fit of coughing, during which they are expelled. This mode of application requires some manual dexterity, and at times the irritation proves fatal. I have, therefore, suggested the shutting up of the chicken in a box, with some shavings dipped in spirits of turpentine, when the vapour arising from the extended surface produces, in most cases an equally beneficial result." The same writer, in a more recent communication to the London *Field* newspaper, on the same subject, says:—"The cure is by no means easy or certain. Removing the worms by a feather or twisted hair is troublesome, and the operation is not always successful. Fumigation with tobacco smoke is rarely of much avail. The administration of turpentine is attended with danger to the chickens, and opening the windpipe and extracting the worms, while the bird is under the influence of chloroform, requires surgical skill. Hence a new, and, as far as I have yet tried, a perfectly successful mode of treatment is likely to be received with favour. Knowing the extremely active influence of carbolic acid on the lower forms of animal life, I determined to try the effect of the inhalation of its vapour in the cases of gapes that came under my notice. During the present season, I have operated three several times on chickens that were suffering severely from gapes, being almost choked by the worms. Each bird was placed in a small deal box, the open top being covered with a cloth. I then took one of Savory's carbolic acid fumigators, which I happened to have at hand. This consists essentially of a small metal saucer, heated by a spirit lamp below. On the saucer I placed about one dozen drops of carbolic acid, lit the lamp, and put the apparatus in the interior of the box: dense white fumes soon filled the box, and, being of necessity respired by the bird, came at once into contact with the worms. The operation was continued in every case until the birds were in imminent danger of suffocation. They soon, however, recovered on exposure to the air, and, on the day following the treatment, were running about perfectly free from any symptom of disease. The chickens operated upon are not now to be distinguished from those of the brood that were not affected. I write to commend a trial of this plan. No special apparatus is required, as any little arrangement which will serve to volatalise a few drops of the acid will answer. In my time I have had a good deal of experience with birds afflicted with gapes, but have never found any treatment at all approach to that of carbolic acid in efficacy. As everyone may not have a spirit lamp, the vapour of carbolic acid might be used by putting a hot brick into the box, and pouring a few drops of the acid upon it." A writer in the *American Agriculturist* says:—"This disease is somewhat similar to the botts in horses. The bott-fly deposits its eggs on the hairs of the horse's sides and legs: they hatch; the worms are licked off and swallowed, and attach themselves to the mucous membrane of the stomach, where they get their growth, and are finally voided in the spring. The grub goes into the ground, and undergoes its changes, and comes out a perfect fly, to pair and in the same way perpetuate its species. The gape-fly deposits its eggs in the nostrils of the chicks: here they hatch, and the worms work their way to the windpipe, where they often exist in large numbers. It is obvious that no preparation of the food will prevent this. I know of no better preventive than keeping the coops, chicken-house, and places where the fowls roost, well cleaned and whitewashed, for old, dirty fowl-houses and coops are particularly liable to perpetuate the disease. When the gapes are noticed, catch the affected fowl, and

hold it between the knees ; with the thumb and forefinger of the left hand, open the mouth ; then gently push down the throat a feather tip (trimmed as previously described), and larger or smaller according to the size of the chicken. The feather is gently pushed down until it stops, where the branches of the bronchus go off to each lobe of the lungs. Then it is turned round as it is pulled out. The worms will either be brought or so loosened that they may be coughed out. If not all expelled, repeat the operation." Another writer says :—" The only remedy with which I have had success is carbolic acid, which I have found very serviceable, both as a preventive and as a pretty sure remedy even in far gone cases." The following is his mode of treatment :—" Dissolve one grain of pure crystalline carbolic acid in ten drops of alcohol, and add half a drachm of vinegar. Strip a small quill feather till within half an inch of the narrow end of the shaft ; moisten the feather in the solution ; then, being wet, draw the nail down over it, laying back the remaining part, which is easily done. One operation, which ought not to be accompanied by more than two insertions of the feather, is usually a cure." Wright, in his *Practical Poultry-keeper*, says :—" If taken early, it will be sufficient to give every day a morsel of camphor the size of a grain of wheat, and to put camphor in the drinking water ; or a little turpentine may be given daily in meal ; taking care, of course, that the deficiencies in diet and shelter be amended." Mr. A. M. Halsted, of Rye, N.Y., says :—" My own experience is, that where one is cured or saved by any of the many remedies prescribed, a dozen are lost. I have raised chickens for the last eighteen years, and for thirteen years of that time on the same spot of ground, and since learning how to prevent the gapes, I do not lose a single chicken by that disease. I have seen cases of gapes on new ground, but they are not very frequent. That there is something prejudicial to gapes in new ground, none will deny, but how or why has not yet been explained. A number of years ago, in examining some young chicks just taken from the nest, I noticed on the heads some insects. They were not lice ; and, after examining them closely, I concluded they belonged to the 'tick' family. I found the head of the insect was imbedded in the skin of the chick's head, and so deeply, when I pulled them off, the chick would cry out in pain. I have found from two to a dozen on a single chicken. I took the pains to pick all these insects off the heads of that brood, and examined them every few days until six weeks or more old, removing what few ticks made their appearance after the first operation. I did not follow it up in other broods, removing these more as an experiment to see what would follow. As the season advanced, our chickens commenced to die off with the gapes. Some entire broods died ; others in part ; but of this brood I did not lose one chick. The next season I resolved to try it on a larger scale, but found the picking off insects a tedious operation. I tried an application of cold grease to the head, but it would not answer. Then tried 'Mercurial Ointment,' and killed a good many of the little chicks ; then kerosene oil, with a like result ; next melted lard, and was partially successful with that ; still I had a few cases among those anointed. Finally, I compounded an ointment of 1 oz. Mercurial Ointment, 1 oz. pure lard, ½ oz. flour of sulphur, ½ oz. crude petroleum. This I applied to the head of the chick in a melted or semi-fluid state ; and now for six years I have not lost a chicken when the ointment has been applied at the time of taking the chickens from the nest. To test the matter even more thoroughly, I had a brood of chickens come off, five of which were Brahmas, and seven common barn-yard chicks. The five Brahmas and one of the common chickens were greased ; the others not. Every one of those not anointed had the gapes, and five of them died, and not another chicken in the yard had it. I have had friends try the same experiment on yards where they were troubled with the gapes, and in every case with nearly the same result." We have already devoted so much space to this subject, that we can only add one more: A writer in the *Canadian Poultry Chronicle* says :—" On the first symptoms that I perceive in any of a brood, however young they may be, I at once have them all caught, and take a wing feather, not too large ; notch it on either side of the quill part of the fine end. I then dip this end in sweet or olive oil, and insert it into the windpipe of the chicken two or three times, turning it round each time, which treatment either brings away the worms, or they are destroyed by the oil ; and the feather being soft does not hurt the throat of the bird." On all animals which do not perspire, parasites which infest the body make their way to the nostrils to drink ; when there the parasite deposits its eggs

at the opening of the nostril. This egg in time becomes larva or worm, and causes the disease. In the chickens the worm follows the nostril back until it reaches the opening of the *trachea*, and there makes a lodgment. As they grow they gradually fill the opening, and thus produce the gasping for breath consequent upon partial suffocation, which is called the "gapes."

Pip.—The symptoms are a short, quick, spasmodic chirrup, repeated at short intervals. It is no disease. On examination a dark, coloured, dry, horny scale will be found on the end of the tongue. This is not the disease, as many suppose, but the results of the disease, and is analagous to "foul tongue" in human beings. In some cases, if not checked, the beak will turn yellow at the base, and the plumage become ruffled; appetite fails, and the bird mopes around and finally dies. A little cayenne or black pepper mixed with meal made into a pill, and administered three times a day will generally effect a cure.

Bad Fledging.—This is less common with the Asiatic breeds than other varieties. The quick maturing breeds which feather early, are most subject to it. The symptoms are drooping of the wings of the chicks and a listless, depressed appearance. The treatment is, a little meat chopped fine, given every day, and some bread sopped in ale. A little burned oyster shell, pounded very fine and mixed with their food, is also beneficial. Above all things keep them out of the wet. The crisis seldom lasts more than a week or ten days; the chicks either die off or recover their health and vigour.

Leg Weakness.—This disease occurs in highly-fed fast growing chickens, and not unfrequently in cockerels and cocks of the larger breeds. Of this disease Tegetmeier says: "*Symptoms.* This disease usually occurs in young birds, and more frequently in cockerels than in pullets. The bird affected is more or less unable to support itself and sinks down on the hocks after standing for a short time, or in bad cases it is even unable to rise on the feet. In other respects the health is good, the appetite being at first, before the bird is injured by want of exercise, very good, and the comb red. *Causes.* The cause of this troublesome complaint, which frequently attacks the finest and heaviest birds, is merely a rapid increase of weight which is out of proportion to the muscular development. It consequently is often present in the weightiest birds, and in cockerels more frequently than in pullets; it is rarer in old birds and is most common in the heaviest varieties. Cochins being more especially subject to it. Constitutional weakness may of course produce it without any rapid growth. *Treatment.* Local applications are perfectly useless; but the most rapid improvement follows from the administration of from three to eight grains of ammonia and citrate of iron daily." Wright says to dip the legs daily in cold water for a few minutes. The diet should be of the most nutritious food, care being taken to select such substances as are flesh-producing and not fattening, wheat or barley for instance; a due supply of worms and chopped meat should be administered daily. Rice or Indian corn should be avoided. The ammonia citrate of iron should be dissolved in the water in which the meal is mixed, and thus given in the food.

Rheumatism or Cramp.—This disease must not be confounded with the preceding; it is caused by exposure to cold and wet, or roosting in damp cold buildings, which makes the birds unable to walk or even to stand, but for which cold bathing would be most injurious. In this case the best treatment is warmth, feeding meanwhile on bread or meal mixed with ale, and always given warm, occasionally a dose of red pepper may be administered with effect but not to be continued long.

Gout or Swelled Legs.—It is recommended for this disease to rub the legs of the fowl affected with grease of any kind once a day for a week, when a cure will be effected. Another remedy is to give a grain of calomel at night, and three drops of wine of col chium twice a day, care being taken as to warmth, diet, &c., of the fowl.

Scurvy or Scaly Legs. It has been ascertained by microscopic observation to be a very minute insect, which works on the legs, and is caused in many cases by too close confinement during winter, over-feeding, and not sufficient meat and green food. Fowls that show any symptoms of this disease should be separated from the others at once and placed in dry warm quarters. Various remedies are prescribed; one, perhaps the best, is to dissolve a little carbonate of soda (sal soda) in water and rub the legs every day with the mixture until the scurf is removed. Strong soap suds will answer the same purpose. After this is done, and the feet and legs become dry, anoint them with lard and sprinkle on some

sulphur or red precipitate, or they may be made into an ointment before they are applied. Another correspondent gives the following :—An application of *cocoa-nut oil and turmeric*—the proportions are about one-fourth of an ounce of turmeric powder to an ounce of the oil ; this forms a yellow ointment—apply it to the parts affected, and a few applications will be sufficient to effect a cure. Another is to wash the legs daily with kerosene oil, anointing them afterwards with salt grease, and another recommends the daily washing with Castile or cresylic soap (the latter preferable), and then to apply lard or oil of some kind. A very excellent one is said to be as follows :—"Wash the legs with a weak solution of sugar of lead in the morning, and anoint them with clean lard, mixed with ointment of creosote in the evening, just before going to roost. Don't, on any consideration, allow the fowls to be exposed to drenching rains or roam on wet or even damp grass; but keep them warm and as quiet as possible until the disease disappears, which, if proper care is taken of them, will result in from eight to ten days."

Bumble-Footed,—High perches are usually the cause of this trouble. The fowls fly down and strike on the ground or floor with such force that the small pieces of gravel or stone are forced through the skin into the feet. Swelling and ulceration follow. There is but little hope of a permanent cure. Applications of nitrate of silver, after removing the matter and the hard skin is sometimes successful. Low, broad perches are a sure preventive.

Curling in of the Toes of Fowls,—Large fowls, such as the Brahma or Cochin, are subject to corns in the fleshy part of the foot. These should be opened, the corn extracted, and the wound dressed with a little Venice turpentine, spread on soft cotton or lint, and the foot bound up.

Diptheria or Cankered Throat,—Is a disease which originates mainly from improper care and sudden changes of weather and variations of temperature. It affects fowls of all ages ; is either acute or chronic, sometimes beginning suddenly, at others gradually, and seems a kind of lingering consumptive disease. It is also occasioned by improper and damp coops and roosts. Fowls, to escape the roup, catarrh, pip gapes and similar diseases should be fed on wholesome food and placed in dry, well ventilated coops, cleanliness proving a great assistance to health. It makes its appearance in a way similar to the croup in the human being. It fills up the windpipe at its opening with a sort of white ulcerous substance, and continues to form and spread over the entire tongue and mouth, occasionally causing the fowl to cough, raise its head, and open its mouth to breathe. The smell from it is very offensive, and unless the bird is relieved it pines away and dies. The treatment giving the best results seems to be removing the ulcers with a quill, or a spoon-shaped piece of metal about the size of a quill, and then applying nitrate of silver or powdered borax to the flesh left bare by the removal, repeating the operation twice a day. It would be well to wash out the mouth with a strong solution of chloride of potassium before applying the borax. A little chloride of potassium dissolved in the water which is given the fowls to drink, may possibly avert the disease—say one quarter ounce to half a gallon of water. Another remedy for this disease is, one half ounce tincture of myrrh, one drachm chlorate of potash. Dissolve the borax and potash in three and a half ounces hot water ; put it into a vial, and when cold add the myrrh. Apply plentifully with a feather or camel-hair brush three or four times a day.

Rattling in the Throat, or Bronchitis,—This is simply a cold settling on the lungs of the fowls, the formation of mucus caused thereby, rising in the windpipe and producing the rattling sound. Unless checked it may result in consumption. A table spoonful of castor oil given to the bird two nights in succession, followed by feeding for a day or two on bread and ale, with a pill of camphor night and morning will soon effect a perfect cure. The bird should be removed to a dry and warm place.

Catarrh,—Like the preceding, this is a cold, but settling in the head instead of on the lungs. The symptoms of this disease are not dissimilar to those in the human being, being a watery or slimy discharge of mucus from the nostrils, swelling of the eyelids, and, in extreme cases, the sides of the face are swollen. The cause of the disease is somewhat similar to that of roup, and if not promptly attended to frequently terminates in roup. Food, consisting of boiled mashed potatoes, well dusted with black pepper, is good. Pills, made the size of a large pea, of mashed potatoes, with Cayenne pepper placed in the centre nd given to them every other day, at feeding time, for a few days, will insure a radical

cure, and give the fowls a good appetite. It is claimed for the following that it was never known to fail :—Take finely pulverised, fresh burnt charcoal, and new yeast, of each three parts ; flour, one part ; pulverized sulphur, two parts ; water, quantity sufficient to mix well, and make into boluses of the size of a hazel nut, and give one three times a day. Cleanliness is essential in all cases, and frequent bathing of the eyes and nostrils of the fowls with warm milk and water.

Roup,—"The scourge of the poultry-yard," as it is not inaptly called by many ; one of the most dreaded and fatal diseases of poultry. Tegetmeier describes the disease as "at first identical with catarrh ; the discharge from the nostril, however, soon loses its transparent character, becoming more or less opaque, and of a very offensive odour : froth appears in the inner corner of the eye ; the lids swell, and in severe cases the eye-ball is entirely concealed ; the nostrils are closed by the discharge drying around them, and the eye-lids are stuck together ; the diseased secretion accumulates within to a great extent, consequently the sides of the face swell to a great degree, and the bird unable to see or feed itself, suffers from great depression and sinks rapidly. Roup is essentially a disease of the lining membrane of the nasal cavities. This being inflamed, becomes swollen, and secretes the discharges before mentioned. It is highly contagious, being communicated by fowls drinking out of the same vessel ; therefore let all fowls affected by it be at once put by themselves, and into warm dry quarters." Mrs. Arbuthnot, in the *Henwife*, gives the following recipe :—"Powdered sulphate of iron, half a drachm ; capsicum powder, one drachm ; extract of liquorice, half an ounce ; make into thirty pills. Give one at a time three times a day for three days, then take half an ounce of sulphate of iron, and one ounce Cayenne pepper in fine powder. Mix carefully a teaspoonful of these powders with butter, and divide into ten parts. Give one part twice a day. Wash the head, eyes, and inside of the mouth and nostrils with vinegar ; it being very cleansing and beneficial." An old remedy is five drops tincture of iron in a teaspoonful of water three times a day ; remove the fowl to a warm dry place alone by itself, feed with scalded food, well seasoned with Cayenne pepper. Wright says :—"Keep them warm and feed with meal only, mixed with hot ale instead of water. Add Douglass' Mixture to the water, and give daily, in a bolus of the meal, half a grain of Cayenne pepper, with half a grain of allspice, or one of Baily's roup pills. Give also half a cabbage leaf every day, and wash the head and eyes morning and evening with very diluted vinegar, or a five grain solution of sulphate of zinc." Mr. Halsted recommends washing the head with cresylic soap suds until the nostrils are opened and the eyes relieved. Then strip a feather to within half an inch of the end, and dipping it into diluted nitric acid insert it into the nostril of the fowl. Two or three applications have usually proved sufficient. Another prescription is to use instead of the nitric acid : Sugar of lead and pulverized opium, twenty grains each, mix with one pint of soft water. With a small syringe inject warm water into the nostril of the sick bird, and then inject the lotion. By using a small bent tube on the syringe an injection can be forced into the nostril through the upper part of the mouth. Feed with soft food only, giving plenty of chopped vegetables, and mix ale with the food. Under this head we find in the *Canadian Poultry Chronicle* Vol. 1. the following :—Two parts *gentian* one *part Hydriodate of potash*. Make into pills the size of a pea ; dose, one every morning. Or, *gentian, ginger, epsom salts, flowers of sulphur*, equal parts ; make into pills, size of a large nut, and give one daily ; head, eyes, and nostrils to be washed with warm milk and water. Or, pills of ten drops of essential oil of *Copaiba*, one morning and evening ; wash the nose and eyes with vinegar and water, and give a purgative dose of twenty grains of *Jalap*, and two grains of *Calomel* about a week after commencing the copaiba. Or, essential oil of *Copaiba* 25 drops, essential oil of *Cubebs* 25 drops, *licorice root* in powder, 50 grains, *magnesia* 50 grains, *treacle* sufficient (about half a drachm) to form a mass ; divide and give one twice a day. Or, a few leaves of *rue* cut fine, and pressed into a small piece of salt butter, and give a piece about the size of a small walnut every morning. Or, *spirits of turpentine and olive oil*, equal *quantities* mixed ; give six drops every morning. Or, take one pennyworth of *blue vitriol stone*, and dissolve it in a tea cup full of hot water ; when cold put it into a bottle, and add one pennyworth of each of the three following ingredients : *spirit of hartshorn, spirit of lavender*, and *tincture of myrrh* ; to use it, take a drop on a wooden skewer, and drop it into the nostril of the bird ; if a very bad case, a little may be dropped into the opening in the roof of the mouth. A writer in the *Poultry Bul-*

letin, gives the following : balsam copaiba one ounce, peperine one drachm, made into sixty pills, and given two or three every day. Wash : a tea-spoonful of sugar of lead, mixed with a pint of water, for bathing the eyes two or three times a day.

Apoplexy.—This is the effect of high feeding. It is rarely seen in time to effect a cure. Fowls are attacked with this disease when apparently in the most robust health—suddenly fall down, die, or are found without sensation or the power of locomotion. If discovered in time, bleeding from the large vein under the wing may perhaps save it ; but it must be done instantly, and in this way : take a sharp pointed penknife and open one of the largest veins under the wing in a longitudinal direction, by pressing the thumb on the vein at any point between the opening and the body, the blood will flow freely and relieve the fowl at once, after which the bird's head should be well bathed with cold water, or better still, held under a tap for a few minutes. If the bird recovers it should be fed sparingly on soft food only, for a few days. In over-fed hens, this disease usually occurs during the exertion of laying ; if, therefore, a laying hen be found dead upon the nest, let the owner at once examine the remainder, and should they appear in too high condition, reduce their allowance of food accordingly.

Vertigo.—This disease is nearly allied, if not wholly identical with apoplexy. Fowls when affected are observed to run round in a circle, or to flutter about with but partial control over their muscular actions. The affection is one evidently caused by undue determination of blood to the head, and is dependent on a full-blooded state of the system. Holding the head of the fowl under a stream of cold water for a short time, immediately arrests the disease, and a dose of any aperient, such as calomel, jalap, or castor oil, removes the tendency to the complaint.

White Comb,—Makes its appearance in the form of small white spots on one or both sides of the comb, which are so thickly clustered together as to be mistaken for a sprinkling of meal or other white powder. It seems to be of a scorbutic or leprous nature. The disease spreads itself down the neck of the fowl, both in front and back, and takes off all the feathers as far as it goes, leaving only the stumps. Tegetmeier recommends stimulating, wholesome food, say oatmeal and water, with a supply of green vegetables, and the administration of some alterative medicine, as flour of sulphur, ten grains, and calomel, one grain, given every other night, and anoint the comb with fresh lard. It can be successfully cured by using cocoa-nut oil, powdered tumeric and sulphur, made into an ointment, and anointing the part affected three or four times a day, and an occasional dose of six grains of jalap. The proportions are about a quarter of an ounce tumeric powder to one ounce of cocoa nut oil, and a third of an ounce sulphur.

Crop-bound Fowls.—The most usual cause of this is having swallowed some object that is too large to pass into the stomach. This obstructs the passage, leaves the stomach empty, and so creates hunger in the fowl. The inclination to eat is followed, and the crop becomes fuller and harder. When in this state all the functions of the body cease, and the bird soon dies. To cure a crop-bound fowl is to remove the food from its crop : there are several ways of doing this. Pour warm water down the throat of the fowl, until the crop becomes full, manipulate the crop gently until it is softened, then hold up the bird by its heels, and let the food run out of its mouth ; continue the process until he is lively and empty. After the crop is emptied, it may get a table spoonful of castor oil. If the cause be, the swallowing of some large object, as already stated, this process will not do : or indeed, if the crop feels hard and stone-like to the touch, it must be opened, and the cause of difficulty removed. The operation is not difficult. Pick off some feathers in front, and with a sharp knife make an incision through the skin and upper part of the crop, and loosen the mass by some blunt instrument and remove it. Sew the crop first, then the skin, with a coarse thread, and rub the suture with grease : be careful not to sew the two together.

Loss of Feathers—Is almost always caused either by want of green food, or having no dust bath. Give them animal food, such as fresh meat, two or three times a week, burnt bones, charcoal, oyster shells with clean water, and if possible, a grass run. Mr. Tegetmeier recommends mercurial ointment, but Wright prefers an unguent composed of sulphur and creosote. Nothing will bring back the feathers before the next moult.

Dust Baths—Fowls in confinement need a dust bath, *i. e.*, a box of mixed ashes and earth, to wallow in. An ordinary soap box will do, filled two-thirds full of dry earth and

wood or coal ashes. Wood ashes are preferable when they can be obtained, mixed with black sulphur.

Enlargement of Liver and Gall.—This frequently occurs in over-fed fowls, or in consequence of feeding unnaturally, or over stimulating food. For a remedy, feed soft cooked food, so as to make as little call upon the digestive organs as possible ; give a grain of calomel every other day for a few days, and remove the bird to dry warm quarters.

Diarrhœa.—The symptoms of this disease are too well known to need description. The causes are, a scanty supply of grain, which necessitates an excess of green food, or an unwholesome dietary of any description. The treatment is simple : five grains of powdered chalk, the same quantity of rhubarb, and three of cayenne pepper, may be administered, and if relaxation is not speedily checked, a grain of opium and one of powdered ipecacuanha may be given every five or six hours. Another is, a pill composed of two parts camphor, two parts powdered rhubarb, and one part powdered chalk, is generally a cure. If the evacuations become coloured with blood, the diarrhœa has passed into *dysentery* and recovery is almost hopeless. In this latter event, chalk, mixed with boiled rice and milk, with a little alum dissolved in their water, so as to make it a little rough, will be found useful.

Soft Eggs.—Soft eggs are generally caused by over-feeding the hens, and the remedy is then self-evident. It may, however, occur from want of lime, which must of course be supplied, the best form being calcined and powdered oyster-shells. Occasionally it is occasioned by fright, from being driven about, but in that case will right itself in a day or two. If *perfect* eggs are habitually dropped on the ground, the nests should be seen to ; they need purifying.

Egg-bound.—To relieve a hen that is egg-bound, take a common tail feather of the hen and strip it until near the tip, and then dip it in sweet oil, and let it remain until it becomes thoroughly saturated, then pass the feather up the egg-passage till it meets the egg, which you will find will relieve the hen at once, and enable her to proceed with her duties ; if she experience any further difficulty, repeat the operation, getting the feather well filled with oil whenever you make an application. Do not attempt to help nature, in the way of pressure, for in that case the egg may become broken and prove fatal to the hen. After you have made the application, as directed, let nature take its course, and all will be right.

Frost-Bitten Combs.—Frost bitten combs can be cured by making a thorough application of glycerine three times a day.

Chicken Pox.—Game fowls are most subject to this disease. It most frequently occurs in cold, wet weather, attacking first birds that have been fighting. The head and face is covered with small ulcers, which scab over. It is contagious, but not necessarily dangerous or fatal. The usual treatment is washing with castile soap, and then with vinegar. Instead of the latter a strong solution of chloride of potassium may be successfully used.

Cholera.—This is a comparatively new disease, and from its fatality is almost as much dreaded as roup, as it is equally contagious. We have not heard of any cases as yet having occurred in Canada, but in several of the Southern States it has made its appearance. In Georgia, North and South Carolina, Tennessee and Kentucky, whole districts have been depopulated of fowls ; and it seems to be yearly making its way North and East. Some writers have endeavoured to show a connection between the symptoms of this disease and that of pleuroneumonia in cattle, but unsuccessfully. According to the best authority we have seen the symptoms are, drooping of the wings and feathers, the latter appearing ruffled. Sometimes a wheezing sound is made, which can be heard some distance. The comb and gills turn dark, in some cases nearly black. It is frequently (but not always) attended by copious discharges from the bowels of a greenish colour. The fowl refuses food, but drinks with avidity, seemingly unable to quench its thirst ; it rapidly grows weak, and unless checked, the disease runs its course in from two to four days. On dissection the liver is found greatly enlarged. Although many remedies have been tried it can scarcely be said that any have been found successful. A correspondent of the Department of Agriculture, writing from Iowa, says : "My chickens have been dying with cholera for the last two years—even turkeys have died of the same disease. When I notice the fowls begin to droop and look sleepy, I give them three or four table-

spoonfuls of strong alum water, and repeat the same the next day. I also mix their food with strong alum water, feeding twice a day for two or three days—afterwards once a week. Since commencing this practice I have not lost any." Another good cure is said to be—give as feed cooked Indian meal, red pepper, gunpowder and turpentine, mixed together. Put in a day's feed, for a dozen fowls, a table-spoonful each of red pepper, gunpowder and turpentine, well mixed through meal. Give them this food every other day for a week or so, and it will, in the most of cases, effect a cure. Another remedy for this disease is, to one gallon of water add one ounce of bi-sulphate of soda; set it where the fowls can drink it.

Bad Moulting.—Moulting is the annual discarding of the feathers and supplying new ones instead thereof. It takes place during the latter part of summer and during the fall, old fowls running far into the winter before their moult is finally completed. The moulting season is then a critical one, especially for old fowls. Not only do the regular flesh-forming life-giving processes of nature have to be fulfilled, but an entire new coat of feathers has also to be manufactured. These feathers consist not of flesh and blood alone, but of component parts of animal and mineral substances. These substances are assimilated from the food, and unless fowls can obtain such food as contain the necessary qualities the process is slow, and the poor birds droop and grow thinner in the vain endeavour to fulfil nature's requirements. Stale bread sopped in old ale is always beneficial. Douglass' mixture is perhaps one of the best remedies. It is as follows:—one half pound sulphate of iron and one ounce sulphuric acid, dissolved in two gallons of water, and is to be added in the proportion of a tea-spoonful to each pint of water in the fountain; if a drop or two of sulphuric acid be added it will prevent the iron becoming rusty. A little hempseed should always be given every day at this season, at least to all fowls of value. A little treatment of this kind not only benefits the health of the fowl, but materially shortens the period of moulting. In addition to this the growth of feathers is stronger and heavier, and the fowls are thus far better able to stand the cold of the winter. The appearance of the fowl, too, is also vastly better, the feathers are lustrous, and appear as if oiled; the bird takes on fat at once, and meets the cold weather with vigorous health and strength which otherwise it might not have. With hardy kinds such precautions are hardly necessary, but they cost little and have good effects.

Lice.—This annoying pest of the hen-house is found every where where cleanliness is neglected. Of these parasites there are several varieties indigenous to the different kinds of fowls and poultry, four of which are Hen-lice. The Big bellied Hen-louse (*Goniocotes hologaster*) is an eighth of an inch long; its head, thorax, and legs are of a pale yellow colour, with pitchy black marginal bands, and its very large abdomen is girt with pale ash-coloured bands (fasciæ), bordered with black. The Big-headed Hen-louse (*Goniodes dissimilis*) has a length of a little over one-twelfth of an inch. It is tawny, smooth, shining, somewhat downy or hairy; head large, with prominent temporal angles; abdomen large. The Long-bodied Hen-louse (*Lipeurus variabilis*) is two-thirds of a line long (a line being equal to about one-twelfth of an inch), of a dirty white colour, margined with black. The head is dome-shaped, pale, yellow, with a black spot on each side behind the eyes. The abdomen has an interrupted (broad and narrow) dusky band running lengthwise down the centre. The Pale Wandering Hen-louse (*Monopon pallidum*) has an elongated body of a pale straw colour, shining and smooth. The head is slightly hollowing on each side, with pitchy black spots. It is from half to three-fourths of a line long, and is found in great abundance in neglected henneries, upon the roosts, &c., and usually first noticed by its running over the hands, from which it is difficult to brush off on account of the smoothness of its body, and the tenacity with which it clings with its sharp claws. Relief from this annoyance may be usually had by giving the fowls a good dust-bath of dry earth or wood-ashes, and one pound of black sulphur. In *The Canadian Poultry Chronicle* for December, 1870, we find the following article on the destruction of Hen-lice or insect vermin:—"All amateurs and poultry-breeders are but too well aware that parasites are the pests of poultry-houses, more especially in towns and cities, where poultry are kept within confined limits. Without, as the owner thinks, any real cause, the fowls begin to droop and look sickly, and after a little one by one die off. He then becomes alarmed, examines them, and finds them covered with parasites; he looks into his fowl-house and examines the cracks and chinks in the boards, and finds them filled with insects,

living insects. He is astonished, he cannot account for it ; and then the question arises in his mind, 'How can I get rid of them ?' Scores of times within the last few months has this question been asked of us, and our answer invariably has been, 'Use carbolic acid.' But how to use it is a matter of importance. There can be no doubt about its efficacy, but it becomes every one to exercise care in handling it. The acid is sold by all druggists in its crystaline and liquid form In crystals it dissolves in twenty times its weight of water, that is, one ounce of the crystals requires twenty ounces of water to dissolve them. Thus dissolved it is entirely too strong for any ordinary use. Dr. Emerson gives recipes for preparing this powder for disinfecting and other purposes. As a whitewash for walls for protection against insects, bugs, &c., he says, 'Put three ounces of carbolic acid into twelve quarts of limewater or whitewash.' Whitewash the walls of the poultry-house well with this wash, and no more living parasites will be seen ; their death is inevitable. A weak solution may be made to wash the fowls in : one part of the acid to sixty parts of warm water ; let it cool, then dip the fowls into it until the feathers become thoroughly wet, and the solution reaches all parts of the body. Afterwards place the fowls on clean dry straw, where the sun will reach them, until they dry. And Mr. Wright adds to this that the use of carbolate of lime is also very beneficial. 'It is,' says he, 'a powerful and very pleasant disinfectant, whilst it also answers most purposes in the way of destroying insects, if dusted liberally against the walls or other infested parts. Being a powder it may also be dusted amongst the straw in the nests, and in other places where a liquid cannot be used ; though in very bad cases the more searching wash above given will be necessary."

Fractures of the Bones.—In regard to this matter Tegetmeier says, that "fractures of the bones of the body are less likely to occur in birds than in other animals, inasmuch as the framework is more completely united together, and is protected from injury by the feathers. In cases where fracture of the ribs or other bones may be suspected, there would be great difficulty in determining the nature of the injury, and I do not think anything more could be done than keeping the bird quiet until recovery. In case of broken wings the quill feathers would prevent any recourse being had to the ordinary method of bandaging. The plan I have pursued is to tie carefully the ends of some of the quills together in their natural position, with the wing closed ; this prevents motion of the broken ends of the bones, and by keeping the bird in an empty place where there are no perches for it to attempt to fly upon, every chance of recovery is afforded. Fracture of the fleshy part of the leg would be less manageable, and I can hardly recommend any bandaging that would be readily applied. The most common fracture in fowls is that of the tarsus, or scaly part of the leg. This is usually treated by wrapping a slip of rag round the injured limb, and tying it with thread—a very imperfect plan, as motion of the broken bones is not prevented, and which is therefore frequently unsuccessful in its results. I always employ a modification of what is known to surgeons as gum splint. The white of an egg is well beaten up with a fork, and spread upon a strip of thick, soft brown paper, as wide as can be smoothly wrapped around the broken limb. The fowl is held by an assistant, the leg slightly stretched, so as to bring the ends of the bones in a straight line, the moistened paper wrapped smoothly round several times, and secured by two or three turns of a thread ; and lastly, to prevent the parts being moved before the paper has become dry and stiff, a thin splint of wood, such as is used for lighting pipes, bound with thread on each side ; the wood may be removed the following day, as it then adds to the weight. The stiff paper forms a bandage which prevents all motion, and so places the limb in the best possible condition for union to take place.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (G).

RETURNS RELATING TO THE AGRICULTURAL COLLEGE AND EXPERIMENTAL FARM.

AGRICULTURAL COLLEGE.—Lands purchased by Ontario Government, 1871.

From whom Land Purchased.	To whom Land Conveyed.	Date of Deed.	No. of Acres.	Amount of Purchase-Money.	Description of Lands.
		1871.		$ cts.	
Thos. Botham and Wife	Her Majesty	November 6	200	18,000 00	Lot 8 in the 1st or Western Meridional Concession, and Lot 8 in the 2nd or Western Meridional Concession, of the Township of Etobicoke.
Patrick Joseph Woods and others	do	November 10	100	8,400 00	Lot No. 7 in the 2nd or Eastern Meridional Concession, in the Township of Etobicoke, otherwise known as Lot No. 7 in the 2nd Concession in the old survey adjoining Lot D, excepting out of said Lot No. 7, a small portion thereof sold and conveyed by Wm. Hipwell to the Hamilton and Toronto Railway Company.
Laurence Coffee and Wife	do	17th Oct. 1871	100	6,500 00	Lot No. 7 in the Western, otherwise the 1st Meridional Concession of the Township of Etobicoke, south-west half of Lot 7 in the 1st Concession of the Township of Etobicoke, but which should be "Lot 7 in the 1st or Western Meridional Concession."
John H. Sproule and others	do	Deed of Grant and Surrender, dated 17th Oct. 1871.			
George Allan Arthurs and others.	do	2nd Nov. 1871.	$191\frac{87}{100}$	12,471 55	Lot 6 in the 1st and 2nd Meridional Concessions of the Township of Etobicoke, containing $191\frac{87}{100}$ acres; also Lot No. 6 in the 1st Concession, otherwise known as the 1st Meridional Concession in the rear of Lots 4 and 5 on Lake Ontario.
				45,371 55	
			$591\frac{87}{100}$		
To paid for Law Expenses for surrender of possession, and for improvements on lands				357 00	
				45,728 55	

Accountable Warrant	$45,900 00
Less purchase-money paid	45,728 55
Refund, Agricultural College	$171 45

ARCHITECT'S DESCRIPTION OF THE COLLEGE BUILDING.

(*From Public Works Report for* 1871.)

Agricultural College.

Advertisements for the necessary lands were duly inserted in the newspapers, tenders for which were received, and 600 acres of land were purchased near the Mimico station of the Great Western Railway, about six miles from Toronto, at a cost of $45,900. As soon as the site was decided on, the plans were completed, and tenders were received on the 15th of November. The tender of Messrs H. J. & R. T. Sutton, for the sum of $47,900 was accepted, and the building was staked out on the 28th of November. Since that time the contractors have been delivering materials, but owing to the severity of the weather no work could be done on the ground.

The college building will be built of red brick, with white brick bases, string courses, and arches over doors and windows, cut stone window sills, slated Mansard roof, and bracketted eaves.

The front building will be 93 feet in length by 50 feet in width, and three stories in height, besides the basement, containing the president's apartments, professors' rooms, library, lecture rooms, museum, chemical laboratory in the basement, and drawing rooms in the upper story. This building will be connected with the rear building or dormitory portion, by means of covered passages, fifty feet in length by ten feet in width, on the basement and ground floors.

The dormitory, 120 feet by 53 feet, and three stories in height, will contain accommodation for 100 students, besides professors' apartments, with large dining room, kitchen, scullery, wash-room, &c., in the basement. The steward's apartments and attendants' rooms will be in the rear portion of the dormitory, with separate stairs.

The buildings are specified to be completed on the first of January, 1873.

In addition to the re-vote of the unexpended balance of $52,650, the sum of $44,774 will be required for drainage, water-supply, heating apparatus, farm buildings, fences, roads, plans and superintendence, furniture, planting, &c., estimates of which have been made, to be included in the appropriations for 1872.

Letter of Rev. W. F. Clarke, relating to the Farm and College.

Guelph, Jan 12th, 1872.

To the Honourble. Peter Gow,
Provincial Secretary.

Dear Sir,—I avail myself of your kind permission to reduce to writing and put into the form of a letter, the substance of some representations lately made by me to you, in reference to the projected Ontario Agricultural College. I do this the more gladly, because I fervently hope that now, at length, this most important public enterprise will be pushed forward into actual operation. Too long have we been behind the States of the adjacent Republic, in provision for educating our young farmers for an avocation, the intelligent and successful prosecution of which necessarily underlies our prosperity and wealth. It is high time that we should be able to point to a well-managed and flourishing College of Agriculture, as proof that our rulers have a wise care and regard for the fundamental interest of our country.

Foremost among the points to which I earnestly desire to direct your attention and that of your colleagues in the Government, are the important questions of location and site. In regard to the former, I can only reiterate the views I expressed in my report addressed to the late Commissioner of Agriculture, under date of June 8th, 1870, and published as an appendix to the Commissioner's Report for that year.

"In fulfilling that part of my commission which enjoins it upon me to "submit an economical and practical scheme for the establishment of an Agricultural College in this Province," I feel no small degree of hesitation and diffidence, in view of the magnitude of such an undertaking, and the difficulties which beset it. Besides personally visiting and inspecting several of these institutions, I have, since I had the honour to receive a commission from you

to report on this subject, made it my business to read up in regard to it and attentively consider the various discussions, plans and experiments which may be said to form the history and literature of agricultural education. I find remarkable unanimity of opinion among leading agriculturists of the world, as to the importance of special training for the business of farming, and the duty of the State to provide such training for its young men. I find also a very decided preponderance of opinion, that such training to be thoroughly efficient must be provided by the establishment of agricultural colleges, distinct from colleges and universities of a general literary and scientific character. I do not know of an instance in which a chair of agriculture connected with a general institution of learning has been successful in drawing around it any large body of students, or exerting any appreciable influence upon the agricultural interests of a community or country. As with the Professorship of Agriculture in our own Provincial University, though filled by one of the ablest agriculturists of the age, the one word *failure* gives the history of all such arrangements. Agriculture is overshadowed by other studies; farming elbowed out by other professions; agricultural students feel themselves of an inferior grade to those who are studying for the legal, medical, or clerical professions, and operated on by a variety of unfavourable influences, the agricultural class in a general college or university is invariably a dwindling and unsuccessful affair. It would seem as a matter of theory, that a School of Agriculture affiliated with our noble Provincial University, and profiting by its existing facilities for pursuing such studies as, though pertaining to a general literary course, are also cognate and necessary to an agricultural course, ought to prosper and be widely useful; but stubborn facts refuse to sustain the theory, and prove beyond successful dispute that to teach agriculture effectively, there must be a separate college for the purpose, with a model or experimental farm attached, where the students can be taught practice as well as principles, and where, without sacrifice of respectability or loss of caste, they can doff the gown and trencher, put on the smock-frock, and handle the dung-fork or the hoe in the actual manipulations of farm work. This is just as needful in a process of agricultural training, as it is that medical students should have hospital practice, or that students of law and divinity should have exercise in elocution and public speaking. I would, therefore, very strongly urge, that if anything be attempted in the way of an Agricultural College for Ontario, as I fervently trust there will, no design be entertained to connect it in any way with the University of Toronto, or any other existing institution of learning, or *indeed to locate it in Toronto, or any other leading city of the Province*, but, "that "choice be made of some country town of sufficient size to furnish society, market and busi- "ness facilities; that the place chosen be the centre of some such wealthy agricultural region "as there is no lack of in our magnificent Province; and that there, where it can exert an "influence peculiarly its own, mould the surrounding public sentiment to respect for the "dignity of labour, and be strong in the affections of an advanced agricultural population, it "pursue that beneficent and useful career which, I feel sure, were it established wisely and "well, under such circumstances would be predestinated for it."

Entertaining the views above stated, it was with much disappointment and regret that I learnt the decision of the late Government to locate the projected College "within ten miles of Toronto" the more so as I could not but regard the reasons urged in support of that decision as peculiarly nonconclusive. It would protract this communication too much to state and discuss those reasons, though I am prepared at any time to controvert them, if called on to do so.

I come next to the question of *site*. In conversation with the late Minister of Agriculture and others on this point, I strongly urged these four requisites to a suitable choice. Firstly: a plot of land comprising all varieties of soil, so that useful experiments might be conducted for the general good. Secondly: a high and if possible undulating stretch of ground, affording opportunity for laying out the estate tastefully, and giving a commanding position for the College buildings. Thirdly: an unfailing supply of running water. Last, but not least: a healthful neighbourhood.

I regret to say, that in the site actually chosen at the Mimico Station of the Great Western Railway, the above mentioned prerequisites are almost wholly wanting. The soil of the farm purchased is for the most part a stiff, hungry, barren clay; the land is monotonously level, with no good place for the College buildings on it; there is no running water, and the very wells in that region go dry in the summer time, so that a constant supply of water for the farm can only be had by the erection of water-works at the lake, a mile distant; and,

finally, the extensive Humber marshes in the immediate vicinity render it, to say the least, extremely doubtful if the place be healthy.

In view of all this, it seems to be desirable that these questions of locality and site for the Agricultural College should be re-considered. I know the awkwardness and delicacy of such a course. I can see how it would give opportunity for fault finding and adverse criticism; but I am thoroughly convinced that the utility of the College is greatly jeopardized by the mistaken policy which has been pursued, and in the interests of the country at large, irrespective of all sectionalism, I beg, nay I entreat and implore you and your colleagues, to entertain the idea of re-consideration. No wrong or loss will be inflicted on any community should a change be made—Mimico is only a flag-station on the Great Western Railway—the spot selected is too far out of Toronto to be of any appreciable benefit to that city; all the prestige of the College, locally considered, will be thrown away if located there; while it can never attract much sympathy and interest from the adjacent farming population in such a place. Locate it in some county town, already the market and business centre of a great agricultural district, and it will both attract and radiate most beneficial influences, and while giving and receiving local advantages, will be of more value to the country at large than if placed where it is now proposed to put it. If it be objected that the site purchased cannot be re-sold without loss, I would ask, is it not better to make some little pecuniary sacrifice to retrieve a mistake, than to entail permanent disadvantages and drawbacks on an institution that will have enough of inherent and inseparable difficulties to contend with, even though established under the most favourable circumstances externally. I believe the contract for the College buildings has been let, but as no material has been deposited, or work done on the ground, the probability is that the contractor or contractors would find it to his or their advantage to carry out the agreement elsewhere, since labour, building requisites and board are cheaper in all our County Towns than in our Metropolitan City. In view of the considerations I have alleged, I feel quite sure the sound common sense and patriotism of the Parliament and the country will sustain the Government in taking the course for which I am pleading. Pardon me if I urge the matter too tenaciously—I feel very strongly in regard to it. You, sir, know with what earnest interest I have been labouring for years to obtain an Agricultural College for our noble Province, and to see its usefulness and success jeopardized by an unwise choice of locality and site may well excite anxious effort to avert the evils which I am certain must result from carrying out the action taken by the late Government.

Before I conclude, I beg leave to make a few general suggestions. It seems to me very desirable that in the estimates ere long to be submitted to Parliament, an item for maintenance of the Agricultural College should be comprehended. No large sum will be required, but enough ought to be provided to admit of the appointment of President and Farm Manager being soon made, and to supply the requisite means for the preliminary expenses those officers must incur. The President should be able to relieve the Minister of Agriculture of the multitudinous details that will require attention before the Institution can be set going, while it is only fair he should have a part in the arrangements over which he has to preside, and for whose efficiency he will be responsible. He will require time to prepare his own course of lectures, for, I take it the chief officer should also act in the capacity of Professor in some department. To secure the greatest efficiency of the Institution, its presiding officer should visit similar colleges to inspect apparatus, that he may make choice of the best; to investigate courses of study and modes of teaching, that the most approved may be adopted; to enquire into conditions of success and causes of failure; and in general to qualify himself as thoroughly as possible for his post of duty. In addition to all this, which will consume some time, the President would require to take steps to awaken interest in the College, among those from whose families the students are to come. It is only a few of our more intelligent and enterprising farmers who appreciate the need and value of such an Institution, or will be disposed to send their sons to it. It is desirable that all parts of the Province should be made to feel that the College is *theirs*, and that representative young men should be got from every section, who on completing their studies will go forth as missionaries of scientific agriculture to their several neighbourhoods. I can think of no better plan whereby this needful preparatory work is to be done than by the holding of County Agricultural Conventions, like the County Educational Conventions held by the Superintendent of Education in the interest of our Common School system. Each county, either by statute adjoining it, or by representation memorializing it, should establish one or more scholarships in the pro-

jected College, to be competed for by the young men of the County, who being Senior Pupils in the Common Schools, and having studied the First Lessons in Agriculture now taught in them, would emulate each other in the endeavour to obtain such useful prizes. Thus a select class of students would be secured, a portion of the expense of maintenance provided by the municipalities and a wide-spread interest awakened and kept up in the subject of agricultural education. Besides attending and addressing such county meetings the President should make large use of the Press in expounding the objects of the College, and commending it to the support of the country. His early appointment alone can secure all this in time to make it morally certain that the Institution will open with a full supply of students, and under auspices of encouragement and vigour.

On the supposition that either the farm already purchased, or a better one, will be in hand before spring, it is needful that some preliminary plan of work be adopted, and a Manager or Superintendent put in charge. By whom he is to be appointed, or to what individual or body of officers he is to be amenable, are matters of detail, into which I forbear entering.

This communication has necessarily been written hurriedly and amid the pressure of many other duties. I trust, therefore, you will overlook its imperfections. Earnestly hoping it may have some influence in shaping the history and promoting the success of the College.

I am, dear Sir,
Yours very truly,
WM. F. CLARKE.

COUNCIL OF AGRICULTURE AND ARTS' ASSOCIATION DEPUTED TO INSPECT AND REPORT ON THE SUITABILITY OF THE MIMICO FARM.

DEPARTMENT OF PUBLIC WORKS, ONTARIO,
TORONTO, February 21st, 1872.

DEAR SIR.—Wide differences of opinion prevailing as to the eligibility of the site purchased by the late Government for the Provincial Agricultural College and Experimental Farm, I have to request that the Council of the Agricultural and Arts' Association will make an examination of the same, and report to me as to—

1st. The nature and adaptability of the soil for the required experimental and illustrative purposes.

2nd. The sources of the water supply.

3rd. The advantage, or otherwise, of the site chosen.

I have the honour to be,
Dear Sir,
Yours very truly,
(Signed) A. McKELLAR,
Commissioner.

Hon. Jas. Skead,
President,
Agricultural and Arts' Association, Toronto.

COUNCIL'S REPORT.

TORONTO, 23rd February, 1872.

DEAR SIR.—I have the honour to acknowledge the receipt of your letter of the 21st inst., requesting that the Council of the Agricultural and Arts' Association would make an examination of the lands purchased by the late Government for the site of an Agricultural College and for an Experimental Farm, and report to you as to their eligibility. In reply, I beg to state that the Council have examined the lands in question, and they have come to the following conclusion :

They are of opinion that the lands referred to are unfit for the purposes intended, for the reasons subjoined:

1st. The locality is not such as to render it desirable for an Agricultural College. It is just far enough from the City of Toronto to be very inconvenient for access by ordinary conveyance, and for obtaining those supplies which are needed almost daily. The lands are not pleasantly situated, and the whole neighbourhood is repulsive and seems to be malarious. The former occupants of the lands do not seem to have been prosperous, and their neighbours are in the same condition. The fair inference from this is, that labour and money have been bestowed on a soil which did not yield an adequate return.

2nd. The soil is bad. A portion of it is stiff clay, with a subsoil of hard, blue clay, too retentive to allow the superabundant moisture to exude and to permit the percolation of water even in the case of drainage, unless drains should be so numerous as to be but a few feet apart, thus incurring a very large outlay. So far as the Council could judge, the proportion of clay soil as above described may, perhaps, include from eighty to one hundred acres. A large portion of the soil on the rest of the farm, embracing, say four hundred acres, is wet and sandy, having a subsoil of hard, blue clay. Some of the soil on the north side of the farm is so light, that when not under grass it would be blown with the wind. Holes had been dug in several places which gave sufficient indications as to the quality of the soil and subsoil. The formation is that of sandstone, the worst possible one for the production of grain, grass, roots or fruit, and most unfavourable for the development of stock. There is no limestone on the farm, a want which cannot be sufficiently supplied, except by the application of lime in large quantities, which would be very expensive. The buildings and fences are nearly valueless, and Canada thistles seem to be everywhere abundant on the farm.

3rd. There is no living water on the farm, so that the necessary supply could only be had at great and continuous cost. The existing wells, some of them over thirty feet deep, are at present dry.

4th. There seems to be little church accommodation for students who would attend the College. This, in the opinion of the Council, is a vital defect. Parents would hesitate to send their sons to an institution where, to a great extent, they would be removed from the influence and restraint of religion, at a period of life when the character is being formed. Besides, the College buildings must needs be large enough to accommodate all the students with board and lodging, as there is no such accommodation in the neighbourhood.

The Council are of opinion that the scheme, as at present projected would end in failure, even in the event of a large expenditure of money. They are, however, of opinion that there would be no difficulty in obtaining a proper place for the College and Experimental Farm, and one which would be creditable to the Province of Ontario.

I have the honour to be,
Dear Sir,
Yours very truly,

STEPHEN WHITE,
President.

The Honourable Archibald McKellar,
Commissioner of Agriculture, Toronto.

I hereby certify that the above letter was submitted to this Council on the 23rd February, 1872, and adopted without division, the following members being present.—Mr. White, President; Hon. J. Skead, Hon. D. Christie, George Graham, Professor Buckland, Nathan Choate, Andrew Wilson, James Young, M.P., A. McNab, Robert Gibbons, M.P.P., Rev. C. J. S. Bethune, Irvine Diamond, L. E. Shipley, George Murton.

HUGH C. THOMSON,
Secretary,
Agricultural and Arts' Association.

COUNCIL AUTHORIZED TO INSPECT FARMS AT GUELPH.

BUREAU OF AGRICULTURE,
TORONTO, February 23rd, 1872.

DEAR SIR,—Referring to my letter to the President of the Association of the 21st inst., I have now further to request that the Council will make an examination of the lands coloured on the accompanying plan, and marked A, B, C, D, E and F, and situated near the Town of Guelph; and also the adjoining lot marked "W. McCreen, 64 acres;" or of any other land or lands the Council may be disposed to examine and to report upon, as to the *nature and variety of soils, water supply,* and *advantages as to site,* for the purposes of the proposed Agricultural College and Experimental Farm.

I have the honour to be,
Dear Sir,
Yours very truly,
ARCHIBALD McKELLAR,
Commissioner.

Stephen White, Esq.,
President,
Agricultural and Arts' Association.

COUNCIL'S REPORT.

AGRICULTURAL AND ARTS' ASSOCIATION,
TORONTO, February 26th, 1872.

Hon. A. McKELLAR,
Commissioner of Agriculture, &c.

SIR,—I have the honour to forward herewith a report of the Council in reference to the sites examined for an Agricultural College and Experimental Farm, which has been adopted unanimously by the Council.

I have the honour to be, Sir,
Your obedient servant,
HUGH C. THOMPSON,
Secretary.

TORONTO, February 26th, 1872.

DEAR SIR,—In accordance with the request contained in your letter of the 23rd inst., the Council visited Guelph with the view of inspecting lands for the site of an Agricultural College and for an Experimental Farm.

The Council first went to see a block of land the property of William Hood, and marked I. A, B, C and D, on the plan accompanying your letter, and an adjoining field of 50 acres, also the property of Mr. Hood. The land in question is about two miles from the Market House in Guelph, and is situated on the east side of the River Speed, which, for about half its width, forms the western boundary of the farm. It is easy of access, being a short way from the macadamized road leading from Guelph to Elora. The farm is very pleasantly situated, and its surface is undulating. The formation is limestone, and the soil on about 200 acres is a fine rich loam, resting on a good subsoil of clay and limestone gravel. About 60 acres on the western end of the farm near the River Speed are sandy loam, gravel being near the surface. About 130 acres on the north side of the farm are somewhat broken and rough. The soil is good, but not so good as on the rest of the farm. This block of land is well watered on the west side, having, as has been already observed, a river frontage of half its width on the River Speed, a first-class stream. A reservation has also been made of access to a mill-race, belonging to a mill property which cuts off the river frontage from the other half of the western side of the farm. There is also a stream of living water about the centre of the farm, which runs from north to south. There are also two good wells. The inside fences are in fair order, and the outside fences are good, being chiefly post and board. There are two good barns on the place, having stone stables underneath. There

are also two dwelling houses, one of stone, not large, but well built. On the north side of this block there are 110 acres belonging to W. and J. Wilson and Wm. McCuen, and marked on the plan F and E. These lands are somewhat broken, rough, and not desirable. On the east side of Mr. Hood's property there are 94 acres belonging to Samuel McCuen, similar in appearance and quality to Mr. Hood's farm. The Council were informed that the price of Mr. Hood's land is $60 per acre, and that his offer is open until Saturday the 2nd of March. The 94 acres belonging to Mr. Samuel McCuen are held at $80 per acre.

The Council next visited the farm of F. W. Stone, Esq., which is situated on the south side of Guelph, and is intersected by the road leading from Guelph to Hamilton. The northern boundary of the farm (which contains 550 acres) is about one mile from the town. The formation is limestone, and the soil is good, being in the opinion of the Council richer than that on the Hood farm, but similar in character. The subsoil is also the same. The surface is undulating, the proportion of upland being about 350 acres, and the valley land comprising about 200 acres of rich land, resting on a subsoil of clay. The tract is well watered, having three streams running across it, and which are nearly equidistant from each other. One of these streams was partially dry during last season, for the first time known. There are also eight wells on the farm which are never dry; one of them is capable of supplying Mr. Stone's large stock with water.

The farm buildings are very extensive and are of the best description. They are noticed in detail on the schedules attached, numbered 1, 2, 3 and 4. In the opinion of the Council the buildings in question, with a little alteration, would be sufficient for the purposes of a College and Experimental Farm for some time to come. They are finely situated, having a commanding view of the Town of Guelph and the surrounding country for miles. A young orchard comprising some 4 or 5 acres set with choice fruit trees chiefly imported from England, is near the dwelling house, in front of which is a thriving quickset hedge. There are some 70 acres of fine timber on the farm. The land is in a fine state of cultivation, and the fences are excellent and in good repair. The Council consider this farm an eligible place for the Agricultural College and Experimental Farm. Appended to this is Mr. Stone's offer to sell the farm for $70,000, which is open until the 25th March. The price per acre is about $127, including the buildings, which are worth at least $30,000. The Council are much pleased with the agricultural capabilities of the country in the neighbourhood of Guelph, which is a very fine and prosperous town, having a population of nearly 7,000.

I have the honour to be, Dear Sir,
Yours very truly,

STEPHEN WHITE, *President.*

Hon. A. McKellar,
Commissioner of Agriculture, Toronto.

COUNCIL'S SUBSEQUENT REPORT ON MIMICO FARM.

TORONTO, June 20th, 1872.

SIR,—In compliance with your request that the members of the Council of the Agricultural and Arts' Association of Ontario should, at this season of the year, revisit the lands intended for the site of the Agricultural College and for the Model Farm, they have the honour to inform you that they have this day inspected the same.

They have again considered the report made by them on the 23rd day of February last, and after a careful review of the lands in question, they beg to state that they see no reason to change or modify the opinions expressed in that report. They have seen the lands referred to in peculiarly favourable circumstances. The early part of the season gave an excellent seed-time, and the genial and copious showers which followed were such as to have enabled good soils to have presented the promise of abundant crops; such, they regret to say, is not the case on the lands at Mimico. They also beg to state that the allegation made in their

former report as to the prevalence of Canada thistles is fully attested by their presence almost everywhere. The Council also found that wild mustard abounds in many places.

I have the honour to be, Sir,
Your obedient servant,
ANDREW WILSON,
Vice-President.

The Honourable A. McKellar,
Commissioner of Agriculture, Toronto.

PROF. MILES' INSTRUCTIONS FOR EXAMINING AND REPORTING ON THE MIMICO FARM

BUREAU OF AGRICULTURE AND ARTS, ONTARIO,
TORONTO, April 23rd, 1872.

To Dr. MANLY MILES,
Professor of Agriculture
in Michigan Agricultural College.

DEAR SIR,—The Government of the Province of Ontario have in contemplation the establishment of an Agricultural College with an Experimental and Model Farm attached thereto, and in pursuance of this object a tract of land has been purchased, concerning the suitability of which much doubt and diversity of opinion have arisen.

In order to arrive at a satisfactory decision as to the adaptability of the land in question for the purpose intended, it has been resolved to commission some competent person to examine and report thereon.

You have been recommended as eminently qualified to undertake this task, from your thorough knowledge of scientific and practical agriculture; your varied and long-continued farm experiments; and your high standing, as both Professor of Agriculture and Farm Superintendent in connection with one of the most successful Agricultural Colleges in the United States.

Having signified your willingness to undertake this duty, you are hereby commissioned to proceed to Lots No. 6, 7 and 8, in the first and second Concessions, in the Township of Etobicoke, County of York, and Province of Ontario, there to institute such investigations as may enable you to report to this Department:

1st—On the general adaptation of the above mentioned Lots for the purposes of an Experimental and Model Farm; including the nature and quality of the soil, suitability of the site for a public building and proper surroundings; facilities for drainage; water supply; healthfulness of location; convenience and comfort of students; and such other points as make for or against the usefulness and success of such an institution.

2nd—A chemical analysis of the soils found on the Lots above named.

It is desirable that your investigations and report should be completed with as little delay as is compatible with due attention to the matters involved.

Your long experience in connection with the actual working of an Agricultural College may suggest to you some general hints and observations that will be valuable in connection with the founding of such an institution in this Province, all of which will be thankfully received by this Department.

I am, Dear Sir,
Yours, &c.,
ARCHIBALD MCKELLAR,
Commissioner of Agriculture and Public Works.

REPORT OF PROFESSOR MILES ON THE AGRICULTURAL COLLEGE FARM, ETOBICOKE, COUNTY OF YORK, ONTARIO.

Hon. A. MCKELLAR,
Commissioner of Agriculture and Public Works,
Province of Ontario.

Having been commissioned by you to examine "Lots number six, seven, and eight, in the first and second meridional concessions in the Township of Etobicoke, County of York,

and Province of Ontario," with reference to their agricultural capabilities and "adaptability for the purposes of an experimental and model farm," I have the honour to submit the following report:-

The eastern part of the farm presents a diversified surface, with gentle undulations of a dark soil, that the superficial observer might at the first glance pronounce good agricultural land.

The west part of the tract has a greater variety of soil, some portions of which present the same general appearance, but from the level areas of difficult drainage it would not make so favourable an impression.

The soil and sub-soil of the farm, geologically considered, belong to the drift formation, the materials of which seem to have been derived almost entirely from the underlying Hudson River shales that make an outcrop on the east side of the farm, in the ravine near the line between lots six and seven.

The Hudson River group makes a fine outcrop on the lake shore, south of the farm, where it consists of laminated argillaceous shales, with layers of sandstone that in some places are calcareous, and in others highly ferruginous, the laminæ being of varying thickness.

A careful examination of the soil and sub-soil of the farm will readily dissipate any favourable impressions derived from the general appearance of the surface.

The fragments of ferruginous and calcareous sandstone, so abundantly distributed in both soil and subsoil, not only indicate the source from which the mass of material has been derived, but they also form a serious obstacle to the cultivation of the surface.

In many places on the farm these fragments of sandstone, varying in size from minute shaly particles to masses of several pounds in weight, constitute more than one-half of the bulk of both soil and sub-soil.

The south-east part of lot six, which is cut off from the farm by the railroad, was not examined, as it forms but an appendage of the farm of comparatively little importance.

Soil.

The soil of the west part of lot six, north of the railway is a heavy clay loam, from five to six inches deep, that with proper drainage and cultivation, would probably make a good wheat soil.

The west part of lot six is a clay loam of fair quality from four to six inches in depth.

The physical condition of the soil is, however, bad from defective drainage. From the level surface, and the tenacity of the sub-soil, the thorough drainage of this part of the tract would involve a heavy expenditure of capital, and a considerable time would probably elapse before a full return could be reasonably expected from the investment.

Some of the best of the soil on this lot contains the fragments of sandstone above mentioned, in such quantity as to materially diminish its value.

On the whole, this lot (six) is by far the best part of the farm.

Lot seven presents a greater variety of soil, but it is uniformly of very inferior quality.

There are occasional small patches of soil, however, that are somewhat better in quality, but these, even, cannot be classed as of medium quality.

The south-west part of this lot is similar in character to the west part of lot six, already described.

The north-west and central portions of the lot have a sandy soil varying in character, from a dark sandy loam to a coarse yellow sand.

The soil in the main is from two to six inches in depth, but, near the line of lot eight, patches of the sub-soil come to the surface in several places.

The soil of the east part of lots seven and eight is a dark loam of inferior quality, from four to six inches in depth, filled with fragments of sandstone and shale.

Passing westward across lot eight, the soil becomes sandy, and at the extreme west it is a light sand.

Near the south part of the middle of the lot, the soil is variegated, consisting of yellow and white sand, and in several places the sub-soil comes to the surface.

The soils of lots seven and eight may be described in general terms as cold and wet, of inferior quality, and unfit for cultivation until their mechanical texture has been improved by drainage.

With the exception of the west part of lot eight, and the south-west part of lot seven, there is sufficient fall for effective drainage, but from the character of the sub-soil any improvements in this direction would be necessarily expensive.

SUB-SOIL.

In determining the agricultural capabilities of a farm, the sub-soil is often of greater importance than the soil itself: for from it, to a great extent, the soil is to be formed and renewed, in anything like a thorough system of cultivation.

Where the soil, as in the present case, is shallow, and of inferior quality, the character of the sub-soil becomes a matter of vital importance.

The sub-soil of lot six, and a small part of the south-west part of lot seven, is a heavy clay, without objectionable peculiarities, so far as composition is concerned, but the numerous fragments of sandstone contained in it will, for a long time, interfere with cultivation.

Aside from the last-mentioned objection, these subsoils, if well drained, might be gradually made to add to the depth of the soil, under a good system of management, with a fair prospect of improving its quality.

The difficulties of securing this drainage have already been mentioned.

The sub-soil of lots seven and eight, with the exception above noted, is a heavy, tenacious, laminated, bluish, and in some places greenish, clay that gives no indication of desirable qualities.

On the west part of these lots the clay is separated from the soil by a layer of yellow ochraceous sand, that is equally unpromising in character.

On lot seven, this layer of sand forms slight elevations of the surface from its varying thickness, while the clay of the sub-soil continues beneath it at about the same level.

Drainage will undoubtedly improve these sub-soils, but I should not expect them to be changed into anything like a good soil for farm crops.

They would require special treatment to make them productive, and even then they would not be suitable for the practice of a good system of mixed farming.

Dr. R. C. Kedzie, Professor of Chemistry in the Mich. State Agricultural College, has, at my request, made a thorough examination of the chemical properties of the samples of soil which I had selected from different parts of the farm.

From his report, which is herewith transmitted, marked A, it will be seen that the views presented above, based exclusively on a physical examination of the soils, are emphatically corroborated by chemical investigation; moreover, it appears that chemistry reveals additional defects in the composition of the soil that, in themselves, are of the greatest importance.

The samples of soil and sub-soil examined by Professor Kedzie were taken from the Mimico Farm in the following localities.

Sample.		
No. 1.	Sub-soil	near north-east corner of lot six.
" 2.	Surface soil	" " "
" 3.	Surface soil	near middle of lot six.
" 4.	Sub-soil	" "
" 5.	Surface soil	west ½ of lot six.
" 6.	Sub-soil	" "
" 7.	Surface soil	near middle of west ½ of lot seven.
" 8.	Sub-soil	" " "
" 9.	Surface soil	south-west part of lot eight.
" 10.	Sub-soil	" " "
" 11.	Surface soil	near building site lot seven.
" 11 *a*	Sub-soil at depth of three feet.	" "
" 12.	Sub-soil	" "

The samples of surface soil were taken at a depth of from two to four inches from the surface, and the samples of sub-soil, with the exception of sample 11*a*, at the depth of from twelve to sixteen inches below the surface.

In selecting the samples of soil the fragments of contained sandstone and shale were rejected as far as it was possible to do so, yet I have no doubt that small fragments of these

materials remaining in the soil have had an important influence on the results of the analysis.

This will perhaps account for the great variation in the amount of lime and iron in the different samples.

The lime it will be seen varies from a mere trace in the east part of lot seven, to the remarkable amount of $23\frac{7}{10}$ per cent. in the sub-soil of the east part of lot No. six.

The iron varies from $2\frac{1}{2}$ per cent. in the surface and sub-soil of the east part of lot six, and the surface soil from the middle of lot six, to $9\frac{1}{2}$ per cent. in the east part of lot seven.

The farm constitutes not only an important but an indispensable part of the educational apparatus of an Agricultural College.

It affords the student an opportunity to labour while acquiring his education, thus developing habits of industry and keeping him in sympathy with rural pursuits.

It furnishes the means of illustrating the teachings of the lecture room, and impressing upon the mind of the student the practical importance of the instruction he has received.

In the system of management adopted upon the farm the practice of the best farmers should be fully illustrated, for the purpose of familiarizing the student with the details of the the best methods.

The first step in agricultural improvement is the thorough mastery of the present state of the art in its most complete development, and the farm of an Agricultural College should furnish to the student the opportunity of advancing thus far at least on the road of progress.

All improvements on received methods should be put to the test of actual practice for the benefit and instruction of the student.

To make the labour attractive and to keep up in the mind of the student an interest in agricultural pursuits, the farm should be, at least, of as good quality as the average of farms with which he is acquainted, and it should give a reasonable return for the labour and capital expended.

The practice should in fact demonstrate that farming is not only an agreeable, but also a profitable occupation.

A soil of at least average fertility and productiveness would be required to illustrate in a satisfactory manner the best systems of modern farm practice.

Any attempts to exhibit the modern improvements in agriculture on land incapable of giving a fair return, under good management, would result in disastrous failure, and bring the best possible practice undeservedly into disrepute.

In judging of results neither the student nor the public would make the proper allowance for the very unfavourable conditions under which the work had been performed.

The results would naturally be compared with those obtained in the practice of farmers who are cultivating land of far better quality.

After visiting a number of farms in different parts of the Province of Ontario, I have formed a high opinion of their fertility, and of the skill with which they are managed, and I am well satisfied that the farm under consideration could not, under the most liberal treatment, be made to rank in productiveness with the average of farms in the Province.

From the examination I have made of the Mimico Farm, I am confident that an Agricultural College located there would labour under serious embarrassments, even if it did not prove an entire failure, as it could not, under the best possible management, command the respect and confidence of the farmers of the country.

In closing this report allow me to thank you for the kind manner in which you have placed at my disposal the means required in making this investigation.

Very respectfully,

M. Miles,

Prof. of Agriculture in Mich. State Agrl. College.

(A.)

Report of Professor Kedzie.

Professor Miles,

Dear Doctor,—I have made a chemical examination of most of the specimens of soil submitted to me by yourself, and I herewith present you a statement of the chemical characteristics of the soils.

These soils all contain a large amount of oxide of iron, varying in amount from 2½ 9½ per cent. In numbers one, two, and three, the iron exists, almost entirely, as per-oxide=to $Fe_2.O_3$.,—these soils containing only traces of protoxide of iron = Fe.O. All the other specimens contain the protoxide in considerable amount; this is especially true of numbers nine, ten, eleven, (surface and sub-soil) and twelve. The presence of the protoxide, especially at the surface, and in large quantity is always *suspicious*, showing imperfect oxidation. Soils numbers eleven and twelve had a distinct *acid reaction*, and numbers ten and nine had also an acid reaction, but less strongly marked. This acid reaction showing that the soil is literally *sour*, is *more than suspicious*—it is enough to condemn such a soil without further hearing in any court of Agriculture.

The amount of lime varied very greatly in different specimens. Thus No. 1 contained 23·7 per cent. of carbonate of lime, while Nos. 12, 11, (surface) 10, and 9, only contained traces of lime; Nos. 3 and 6, had nearly one per cent.; No. 7 had 1·3 per cent.; No. 8, 3 per cent.; and No. 2 had 6·8 per cent. In some instances the lime seems to have sunk into the sub-soil; thus in surface soil of No. 11 only a trace is found, while the sub-soil contains 8·41 per cent.

In the amount of magnesia there is a corresponding variation: No. 1 has 2 per cent. No. 2 has 1.3 per cent.; Nos. 9 and 10, a little over 1 per cent., and No. 3 a little less than 1 per cent., while Nos. 11 and 12 have only a small fraction of a per cent.

The phosphates could be detected in the part soluble in concentrated Hydrochloric acid, only in Nos. 1, 2, 3, 6 and 7. In the other soils, if present, they were in an insoluble form.

To sum up this consideration of the soils, I should pronounce Nos. 1, 2, and 3 good soils, because they contain a sufficient amount of the alkaline earths (lime and magnesia) a sensible amount of the soluble phosphates and sulphates, and are free from any appreciable quantity of the protoxide of iron, and they also contain a sufficient supply of vegetable matter; that Nos. 6 and 7 are fair soils for reasons given above, but are not of first quality because they contain a considerable amount of protoxide of iron, showing deficient oxidation and probable need of good draining: that Nos. 9, 10, 11, and 12 are unfit for cultivation, as shown by the large excess of protoxide of iron, their acid reaction, the absence of proper amount of alkaline earths (lime and magnesia), and the absence in appreciable quantity of soluble phosphates. They are far better fitted for making bricks than for raising crops.

I make these conclusions in regard to the agricultural capabilities of these soils, entirely from their chemical composition, and not from their physical properties, which are evident on inspection.

Respectfully submitted,

R. C. Kedzie,

Prof. Chem.

June 1st, 1872. *Michigan State Agricultural College.*

Appointment of a Committee to Examine and Report on the Mimico Farm.

Provincial Secretary's Office,

Toronto, 7th November, 1872.

Sir,—I am commanded by His Excellency the Lieutenant-Governor to inform you, that he has been pleased to name you, together with John Miller, of the Township of Pickering; James Cowan, of the Township of Waterloo; Robert Ball, of the Township of Niagara; and John Dryden, of the Township of Whitby West, as a committee to inquire into the fitness of the Mimico Farm, as a proper site for the proposed Model Farm, about to be established by the Government, and, in so doing to specially examine into and report upon the following points, viz.:—

1st. As to the nature and adaptability of the soil for the required experimental and illustrative purposes.

2nd. The source of water supply.

3rd. The advantages or otherwise of the site.

I have to desire you to signify, at the earliest possible moment to this Department, your acceptance or non-acceptance of this appointment, and in the event of your undertaking the

duties thereof, to further request you to meet the gentlemen associated with you at the office of the Honourable the Commissioner of Public Works, Parliament Buildings, on Tuesday, the 12th inst., at 10 o'clock, A. M.

I have, &c.,

I. R. ECKART,
Acting Assistant Secretary.

Henry Croft, Esq., M. A., D. C. L., &c.,
Professor of Chemistry, University College.

LABORATORY, UNIVERSITY COLLEGE,
November 9th, 1872.

SIR,—In reply to your letter of the 7th inst., informing me that His Excellency the Lieutenant-Governor had been pleased to appoint me to the committee on the Mimico Farm, I have to state that my professional duties, occupying the earlier and greater part of each day, will prevent me attending committee meetings, unless on special occasions.

My advice and assistance, however, could only be of value as regards the examination of the soil, the testing the purity of the water, and other cognate subjects.

This work could be done at the Laboratory, on any specimens collected by the more agriculturally practical members of the committee.

So far my services are entirely at His Excellency's disposal, and I shall be most happy to assist to the best of my ability; in other respects I fear my opinion would carry little weight.

I have the honour to be,
Sir,
Your obedient servant,
HENRY H. CROFT.

Isaac R. Eckart, Esq.,
Acting Assistant Secretary.

[All the other gentlemen consented to act, except Mr. Cowan, who was engaged in a distant part of the Province, on public duty.].

DEPARTMENT OF PUBLIC WORKS, ONTARIO,
TORONTO, November 13th, 1872.

GENTLEMEN,—Being authorized by His Excellency the Lieutenant-Governor in Council, you are hereby requested and empowered to proceed forthwith, and enquire into and report upon the fitness of the Mimico Farm, as a proper site for the proposed Model Farm and Agricultural College; and to examine into and report upon the following points:—

1st. As to the nature and adaptability of the soil for the required experimental and illustrative purposes.
2nd. The source of water supply.
3rd. The advantages or otherwise of the site.

I have the honour to be,
Gentlemen,
Your obedient servant,
ARCH. MCKELLAR,
Commissioner.

John Dunlop, Esq., Woodstock; Robert N. Ball, Esq., Niagara; John Miller, Esq., Brougham; John Dryden, Esq, Brooklin.

REPORT OF COMMITTEE.

To the Honourable,
ARCHD. MCKELLAR,
Commissioner of Public Works, and Agriculture.

SIR,—We, a committee appointed to enquire into the fitness of the Mimico Farm, as a proper site for the proposed Model Farm, about to be established by the Government:

"As to the nature and capability of the soil for experimental and illustrative purposes;

"The source of water supply; with the advantages or otherwise of its site."

Having walked over the lands, and carefully examined, in numerous places, both the soil and sub-soil; we are united in opinion, that the soil, in general, is poor and thin, averaging from three to six inches in depth, a portion of it, we find, has the appearance of average soil, but the sub-soil on such portion is of a very inferior quality, being composed, either of a tenacious barren sort of blue clay, or clay mixed with sandstone rock. The larger portion of the soil, we find is of a light sandy nature, under-lying which, and in fact showing itself on the surface in many places, is a yellowish and white sand, apparently of an utterly barren character.

On the whole, with little exception, the sub-soil is of such a character, that if thoroughly incorporated with the soil, by a system of deep cultivation, would not add to its fertility; even on better portions of the farm, deep cultivation could not be effected, without a system of thorough under-drainage, which from the level surface, together with the tenacity of the sub-soil, must involve a very heavy outlay of money.

We are of opinion that a soil of average fertility would be required, to illustrate in a satisfactory manner, the best system of modern husbandry: and if so, this could not be done on the Mimico Farm, without an extravagant outlay, for drainage and fertilizers. The system of husbandry thus required would necessarily convey a very erronious impression to the agricultural pupils.

Judging therefore the soil in all its bearings, we are forced to the conclusion, that it is not suitable for the proposed Model Farm, and could never, by its results, show the capabilities of an average farm in Ontario.

We find a very deficient supply of water, no running water on the farm, nor are there any indications of surface springs. The only dependance for a water supply, must be by expensive works at the Lake, or by wells at different points on the farm.

Respecting the site, we do not think its natural surroundings are at all pleasant, but with other things favourable, would perhaps not be objectionable: under the circumstances, however, we can see nothing in the locality which could particularly recommend it for the purposes required.

All of which is respectfully submitted by, Sir, your obedient servants,

JOHN DUNLOP, Woodstock.
ROBERT N. BALL, Niagara.
JOHN DRYDEN, Brooklin.
JOHN MILLER, Brougham.

Toronto, 5th December, 1872.

REPORT OF COMMITTEE ON FARMS AT WHITBY, GUELPH, AND WOODSTOCK.

The Honourable ARCHD. MCKELLAR,
Commissioner of Agriculture, Toronto.

SIR,—The undersigned appointed by you, to examine the various farms referred to in this report, beg leave to submit the following statement of the result of their investigations:—

THE WHITBY FARMS,

Consisting of Lots or parts of Lots Nos. 23, 24 and 25, First Concession, Township of Whitby

and extending to about 640 acres, on the east side of the Town of Whitby, and near the station of the Grand Trunk Railway.

The block is intersected by a road allowancce which can be closed if necessary; the lands are also intersected by the Port Whitby and Port Perry Railway.

The undersigned found the soil of excellent quality, varying from eight to twelve inches in depth, and consisting of light sandy loam, sandy loam and black loam; the sub-soil is also excellent, varying from sandy loam to strong clay loam. The surface is rolling, affording ample fall for drainage. A small stream runs through the centre of the block, which it is said sometimes dries up, after a long continuance of dry weather. There is a never failing spring on No. 25, which is centrally situated in high ground; there are two springs on Lot 24 which would afford a plentiful supply of water.

There is a small portion of woodland on the block, not of the best description.

The fences are in a fair condition.

The principal building called "Trafalgar Castle", is a spacious structure of about 105 feet by 60 feet three stories high with a wing of 50 feet by 35 feet of two stories; there is a small detached out-building, which is a stable and coach-house. The whole being substantially built of stone and brick covered with slate, and finished in the most complete and expensive manner. The dwelling-house is furnished with gas and water pipes throughout, and is heated by hot air from the basement, and is said to have cost $60,000.

The other buildings on the property are in fair order, and may be worth from $5000 to $6000. The buildings in question might be advantageously converted into an Agricultural College, and the out-buildings, so far as found suitable, could be used for a farm steading.

The undersigned also examined Lots 28, 29 and 30, of the First Concession of Whitby, embracing some 600 acres; they are immediately west of the Town of Whitby, and are intersected by the Grand Trunk Railway.

The soil is partly strong clay loam, partly of a lighter description of clay loam; and the remainder is a rich black loam, varying from eight to twelve inches in depth; the sub-soil is a good strong clay, the surface is gently undulating and has a good fall for drainage.

A never failing creek runs through the north-west corner of the block, and there is a never failing spring on the north east corner, which would be available for stock. There is a small portion of very inferior woodland on the block, and a considerable portion of unimproved land on the west side.

There are three good brick dwelling houses, and several frame buildings on this block, which might be worth from $6000 to $7000; they could be used for a model farm. There are no buildings on the block suitable for an Agricultural College.

The undersigned prefer the eastern block for the purpose of an Agricultural College and Madel Farm.

The Town of Whitby is the county seat of Ontario, and has a population of from 3,000 to 4,000. There are in it eight churches of different denominations, and excellent Grammar and Common Schools.

Whitby is a shipping port and has two railway stations. The surrounding country is well settled by a skilful, industrious and wealthy class of farmers, among whom are a number of the most prominent stock-breeders in the Province.

The Guelph Farms.

The undersigned have examined the Hood and other farms adjacent to it, comprising a block of 600 acres, situated about one and a half miles from Guelph

They found the soil chiefly sandy loam, some of it light sandy loam and gravelly, varying in depth from eight to twelve inches. The sub-soil is principally sandy and mixed with gravel.

The surface is undulating, and about 120 acres of rough, stony and hilly; it is bounded on the west side by the river Speed. There is a little straggling timber on the west side of the block.

The buildings are a two-story stone dwelling house, and a two-story rough-cast house, with two good frame barns, built on stone work, affording accommodation for cattle.

The buildings referred to may be worth about $8000. There are no buildings on the block suitable for an Agricultural College.

They also examined Mr. Stone's farm, extending to about 550 acres, situated about one mile from Guelph. The soil is a good clay loam, varying from eight to fifteen inches in depth; part of it is black loam and is underlaid by a strong clay subsoil, and part of it is somewhat sandy. The surface is rolling and gently undulating, having a good fall for drainage. There are several spring wells on the block and two small creeks. There are also about 70 acres of woodland of good quality, and from 30 to 40 acres from which the stumps have not been extracted.

There is a large stone mansion house of two stories, substantially built, well finished and covered with slate, this building might be made available for an Agricultural College, were lecture rooms, kitchen and dining-rooms added. There are besides, a two-story dwelling-house, a small brick cottage, and two frame houses which might be useful.

The farm buildings consist of a large barn, cow stable, bull shed, sheep sheds, cattle sheds and horse stable with yards attached, they are built of stone and wood and are suitably arranged for the purpose of stock-breeding; by some alterations they could be made available for a model farm.

There is also a large frame barn and sheds for sheep and implements on the south-west portion of the block. The buildings referred to are quite ample for the purposes of a model farm, and the fences are in good order; a considerable portion of this farm has been underdrained.

The undersigned are decidedly of opinion that this farm is much more suitable for the purposes required than the Hood farm; they have estimated the value of the buildings at from $25,000 to $30,000.

The Town of Guelph, the county seat of Wellington, is situated in a beautiful country, and is on the line of the Grand Trunk Railway and of the Wellington Grey and Bruce Railway. The population is from 8,000 to 9,000. The town is substantially built and has extensive manufactories of agricultural implements, machinery, carriages, sewing machines, woollen goods, piano-fortes, organs and melodeons. There are also three large flouring mills and several breweries. There is ample church accommodation in connection with the various leading denominations; there is also a superior grammar school and several excellent common schools. The country around is well cultivated, and is inhabited by enterprising and wealthy farmers. The County of Wellington is celebrated for improved breeds of horses, cattle, sheep and pigs.

The Woodstock Farms.

The undersigned examined lots 3, 4 and 5, in the 10th concession of East Zorra, containing 600 acres, situated about two miles from Woodstock. The soil is of excellent quality, a clay loam varying in depth from nine to fifteen inches, over a strong clay subsoil, with a good outfall for drainage. The land is gently undulating. A living stream runs through the north-east part of the block, on which there are several springs. There are also about seventy acres of superior woodland.

The buildings are, a two-story brick house and several frame barns, not of much value; they may be estimated from $4000 to $5000.

The fences are in bad order.

They also examined lots 3, 4 and 5, on the 11th concession, East Zorra, comprising 600 acres, situated within half a mile of the limits of the Town of Woodstock. The soil and subsoil are very similar to the farm on the 10th concession. The surface is more rolling, and there are three never-failing small streams runnning through the block; there are about eighty acres of good woodland. The fences are in good order.

The buildings are a two-story and a one-story brick dwelling-houses, five frame houses, with a good bank barn and several other farm buildings, which could be made available for a model farm; they may be valued at from $8000 to $9000.

The undersigned decidedly prefer this to the block on the 10th concession.

Woodstock is the county seat of Oxford, and has a population of upwards of 5000, and several manufactories for agricultural implements, furniture and musical instruments. There are three foundries, two grist mills, a tannery, and door and sash factory. There are ten

churches belonging to the different religious denominations. Woodstock is on the line of the Great Western Railway, and is in the midst of a rich agricultural district specially noted for the extent and excellence of its dairy products.

The undersigned have the honour to be,

Yours most respectfully,

JOHN DUNLOP, Woodstock.
JOHN MILLER, Pickering.
JOHN DRYDEN, Brooklin.
*D. CHRISTIE, Paris.
ROBT. N. BALL, Niagara.

Woodstock, 13th December, 1872.

* Except as to the "Whitby Farms," which I did not see.—D. C.

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (H).

ANALYSIS OF CROP RETURNS FOR THE YEAR 1872.

CROP RETURNS.

(Circular to Secretaries of Electoral Division Agricultural Societies.)

BUREAU OF AGRICULTURE AND ARTS,
TORONTO, September 6th, 1872.

SIR,—I have to request, in accordance with the practise of previous years, that you will furnish me with as accurate a Return as possible of the results of the Harvest in your ELECTORAL DIVISION, by filling up the accompanying Schedule. You will please insert what is considered to be a correct *average* per acre, stated in measure or weight of the respective crops. The column for "Remarks" may be filled with brief statements of the varieties or kinds that are considered most hardy and prolific, and with any facts connected with, and throwing light on, the modes of cultivation.

In order that the information which I seek by means of this circular may be received in time for insertion in my Report to Parliament, I urgently request that you will not fail to make your return *by the 1st December, at the latest.*

I enclose several copies of this Schedule that you may, if you deem it desirable, transmit them to your Township Societies, or to any persons interested in, and competent to give reliable information on the subjects of this enquiry.

Any blank Schedules which you may send out, should, after being filled up, *be remitted to you*, (not to this Department) in time for you to make up the Return for your Electoral Division, as before stated, since any information reaching me after the 1st December, will not be available for my Report.

You will please sign and date your Return, and insert the name of the Electoral Division, on the back of this Circular.

Yours respectfully,
ARCHIBALD McKELLAR,
Commissioner.

SUBJECTS OF INQUIRY.

Average per acre and *quality* of produce of the following crops :—Fall Wheat, Spring Wheat, Oats, Rye, Barley, Peas, Beans, Hay, Corn, Potatoes, Turnips, Carrots, Parsnips, Mangold Wurzel.

Please furnish any information available as to :—1st. Insects injurious to Grains, Roots and Fruits this season; 2nd. Flax culture, its extent and prospects; 3rd. Hop culture, its extent and prospects; 4th. Crops that may have been more or less cultivated this season than the average of late years; 5th. What has been the character of the season relative to the different kinds of Fruit?

ANALYSIS OF CROP RETURNS.

Addington.

Fall Wheat.—25 bushels per acre; quality good; not much cultivated.

Spring Wheat.—20 bushels; sample good; principal variety raised, "Fife," with some "Black Sea."

Oats.—35 bushels; quality pretty fair.

Rye.—18 bushels; do.

Barley.—32 bushels; sample, light.

Peas.—20 bushels; quality, middling.

Hay.—1 ton; well saved; quantity diminished by drought.

Corn.—25 bushels; quality good.

Potatoes.—150 bushels; do. very little injured by the Colorado Beetle; *Turnips* and the other root crops, not extensively cultivated, which is also the case with Flax and Hops. *Fruit*, very indifferent.

Algoma.

Fall Wheat.—20 bushels; excellent sample; not extensively cultivated.

Spring Wheat.—20 bushels; quality fine.

Oats.—25 bushels; heavy; cultivation increasing.

Barley.—25 bushels; quality good.

Peas.—20 bushels; excellent; cultivation considerable.

Hay.—2 tons; 1st. class; large quantity grown.

Corn.—Only grown in gardens; on the Manitoulin it is raised in quantities with success.

Potatoes.—150 bushels; excellent quality; no where surpassed.

Turnips.—200 bushels; a splendid crop.

Carrots.—200 bushels; good quality.

Mangel Wurzel.—175 bushels; good. Mangels and Beets succeed admirably.

Hops do well, but confined to gardens. Root crops increasing. *Fruit*, but little raised; quality, pretty good; *Currants*, and *Strawberries*, excellent.

Bothwell.

Fall Wheat.—15 bushels; quality very good.

Spring Wheat.—15 bushels; do.

Oats.—25 bushels; light.

Barley.—30 bushels; quality good.

Peas.—15 bushels; medium quality.

Beans.—20 bushels; heavy and good.

Hay.—1½ tons; quality good.

Corn.—30 bushels; good.

Potatoes.—Crop very inferior; almost destroyed by drought and the Colorado Beetle.

Turnips.—400 bushels; quality sound and good.

Carrots, Parsnips, and Mangel Wurzels.—Each about 400 bushels per acre; quality good. Cultivation of *Hops* and *Flax* very limited. *Fruit* was considerably affected by drought.

BRANT, SOUTH.

Fall Wheat.—15 bushels; quality good. Winter-killing the cause of the shortness of the crop.

Spring Wheat.—14 bushels; quality excellent; drought in June and July very injurious.

Oats.—25 bushels; sample light; early sowing succeeded, but late sowings very inferior.

Rye.—12 bushels; quality good.

Barley.—25 bushels; bright in colour; but very light; ripened too rapidly.

Peas.—12 bushels; quality very poor; injured by drought in summer, and excessive rains in harvesting.

Beans.—16 bushels; good quality; cultivation extending.

Corn,—20 bushels; good.

Hay.—1 ton; well saved; but quantity much affected by drought.

Potatoes.—200 bushels; quality very fine; Colorado Beetle appeared, but not very injurious.

Turnips.—500 bushels; very good quality.

Mangel Wurzel.—20 tons; very good quality; not largely cultivated. *Carrots* and *Parsnips* chiefly confined to gardens. *Hops.*—100 acres; average about 800 lbs per acre; average value 25 cts per lb. with an upward tendency; prospects good. *Fruit.*—Too dry and hot; particularly for the smaller kinds. Apples, Pears, etc., were much benefited by the copious autumnal rains.

BRUCE, NORTH.

Fall Wheat.—30 bushels; quality good; yield generally good; some cases of winter killing.

Spring Wheat.—25 bushels; fair sample; straw rather heavy; pretty free from insects in general.

Oats.—35 bushels; quality middling.

Barley.—28 bushels; sample excellent.

Peas.—37 bushels; first quality. In some instances not harvested sufficiently early, owing to the pressure of the wheat harvest and deficiency of hands.

Hay.—1½ tons; quality good; but some loss was sustained in the making, from want of labour.

Potatoes.—150 bushels; quality excellent; crop better than of late years.

Turnips, Carrots, and other root crops yielded well, when properly cultivated; not grown extensively. Their culture, however, is steadily extending, and their value as cattle-food better understood. *Fruit,* generally good.

DURHAM, WEST.

Fall Wheat.—10 bushels; quality poor; much of it winter-killed; difficult to state an average.

Spring Wheat.—20 bushels; good sample.

Oats.—30 bushels; fair quality.

Rye.—15 bushels; good sample; not much cultivated.

Barley.—25 bushels; average quality.

Peas.—20 bushels; " "

Hay.—1½ tons; " "

Potatoes.—150 bushels; good quality; Colorado Beetle commenced its ravages.

Mangel Wurzel.—A good crop, but *Turnips* almost a failure. *Currants* yielded well, but not largely grown, and *Parsnips* confined to gardens.

DUNDAS.

Fall Wheat.—30 bushels; quality good; not much cultivated.

Spring Wheat.—25 bushels; sample light; weather too wet.

Oats.—40 bushels; good quality.

Barley.—40 bushels ; heavy grain, but discoloured by wet.
Peas.—30 bushels ; not raised extensively.
Hay.—2 tons ; good quality when well saved.
Corn,—35 bushels ; too much wet for this crop.
Potatoes.—200 bushels ; quality generally fair. Other root crops but very little raised. *Hops,* but few cultivated ; crop pretty good. *Fruit,* on the whole, indifferent ; the worm injured the apples.

ELGIN, EAST.

Fall Wheat.—18 bushels ; medium quality ; winter-killed in some localities ; "Treadwell" yielded best.
Spring Wheat.—18 bushels ; excellent sample ; not largely cultivated.
Oats.—30 bushels ; sample light ; injured by drought.
Barley.—30 bushels ; quality inferior ; ripened too quickly.
Peas.—15 bushels ; sample inferior ; damaged by the bug.
Hay.—1½ ton ; good quality ; well saved.
Corn.—60 bushels ; very good quality ; culture extending.
Potatoes.—125 bushels ; quality excellent ; the Colorado Beetle appeared in considerable numbers, but did little harm as the crop was far advanced.
Turnips.—A very poor yield.
Carrots.—500 bushels ; good quality ; not extensively cultivated. The same will apply to *Mangel Wurzel.*
Flax.—An average crop ; somewhat injured by drought.
Hops.—An excellent crop both as to quantity and quality.
Fruit.—Apples a pretty good crop ; plums injured by the Curculio ; cherries and small fruits very poor.

ESSEX.

Fall Wheat.—10 bushels ; inferior quality ; much injured by drought.
Spring Wheat.—16 bushels ; sample good.
Oats.—40 bushels ; suffered somewhat from rain in harvest.
Barley.—30 bushels ; superior quality.
Peas.—15 bushels ; injured by the bug.
Corn.—40 bushels ; excellent quality.
Hay.—1½ tons ; well saved.
Potatoes.—A failure from drought and the Colorado Beetle.
Mangel Wurzel.—700 bushels ; quality good. Other root crops but little raised.
Hops.—Crop pretty good ; but not largely cultivated.
Fruit.—Too dry and hot beginning of the season. Codlin moth, Curculio, &c., affected several kinds of fruit.

FRONTENAC.

Fall Wheat.—Generally failed ; winter-killed ; not much cultivated.
Spring Wheat.—15 bushels ; sample good.
Oats.—35 bushels ; rather light.
Rye.—15 bushels ; grain heavy.
Barley.—30 bushels ; a little discoloured, otherwise very good.
Peas.—20 bushels ; quality fair.
Hay.—1 ton ; well saved.
Corn.—40 bushels ; grain good.
Potatoes.—100 bushels ; quality good. Colorado Beetle first appeared, but did little mischief.
Mangel Wurzel.—300 bushels ; quality excellent ; other root crops not much cultivated.
Fruit.—The severity of last winter was injurious to fruit trees, and the crop small. The Curculio and Currant Caterpillar very destructive.

GLENGARRY.

Fall Wheat.—Mostly killed by severe frosts; not largely grown.
Spring Wheat.—20 bushels; quality under average. "Black Sea" generally sown.
Oats.—45 bushels; weight heavy, except where lodged by too much straw.
Barley.—40 bushels; good quality; mostly four rowed.
Peas.—30 bushels; sample excellent; the small white.
Corn.—40 bushels; quality good.
Hay.—2 tons; " "
Potatoes.—250 bushels; quality mostly good of the different varieties.
Turnips.—700 bushels; good quality; mostly Swedish.
Carrots. and *Mangels.*—1000 bushels; of excellent quality. *Hops* and *Flax*, generally do well, but very little cultivated. *Fruit,* pretty favourable.

GREY, SOUTH.

Fall Wheat.—30 bushels; quality good; "Treadwell" most suitable.
Spring Wheat.—20 bushels; quality fair; "Glasgow" most suitable, a change required.
Oats.—40 bushels; heavy; some new kinds, as "Surprise," "Norway," and "Sandy," are being grown.
Barley.—50 bushels; good quality; well adapted.
Peas.—30 bushels; " "
Hay.—2 tons; well saved; crop over an average of years.
Corn.—40 bushels; good quality.
Potatoes.—175 bushels; good quality "Early Rose," much approved.
Turnips.—500 bushels; good quality; rather uneven; fly injurious in some places.
Carrots.—600 bushels; good; culture extending.
Parsnips.—200 bushels; quality poor; crop less than usual; not grown extensively.
Mangel Wurzel.—400 bushels; quality middling. Culture of Fall wheat increasing; as are turnips and carrots; turnip fly injurious in some places; Colorado Beetle appeared, but not very destructive. *Fruit,* favourable.

HASTINGS, NORTH.

Fall Wheat.—18 bushels; quality good; white varieties mostly cultivated.
Spring Wheat.—20 bushels; sample very good; "China," "Club," and "Fife," most approved.
Oats.—34 bushels; quality good; "Norway" much cultivated.
Rye.—22 bushels; sample very good.
Barley.—25 bushels; good quality; extensively cultivated.
Peas.—18 bushels; good quality the "Golden Vine."
Beans.—20 bushels; quality fair; the common white variety.
Corn.—25 bushels; quality inferior; frost too early; 8 and 12 rowed in general use.
Hay.—1½ ton; quality good; clover winter-killed and grasshoppers injurious.
Potatoes.—80 bushels; quality fair; "Early Rose," "Harrison," "Chili," the most approved varieties. The Colorado Beetle has made its appearance, but not done much harm as yet.
Hops.—But few grown; crop middling; the culture slowly increasing.
Fruit.—Apples &c., middling crop; plums, cherries, and currants almost a failure.

HASTINGS, EAST.

Fall Wheat.—Nearly all winter killed. What survived produced a fair sample.
Spring Wheat—20 bushels; quality good; "Fyfe" mostly raised.
Oats.—35 bushels; weight pretty good.
Rye.—20 bushels; fair; not much raised.
Barley.—30 bushels; quality good, some rather discoloured; a principal crop.
Peas.—20 bushels; middling.
Hay.—1 ton; good quality; clover badly winter killed.

Corn.—40 bushels; good quality.
Potatoes.—100 bushels; good quality: Colorado Beetle made its appearance, but did little injury.
Turnips.—300 bushels; good quality; not extensively cultivated.
Carrots and Mangel Wurzel.—Fair Crops; culture very limited. Insect depredations inconsiderable. *Hops.*—Yield good, but few cultivated. *Fruit.*—Pretty fair.

Hastings, West.

Fall Wheat.—15 bushels; quality good; not extensively cultivated, but increasing.
Spring Wheat.—25 bushels; superior sample.
Oats.—45 bushels; heavy.
Rye.—15 bushels; light; injured by frost.
Barley.—35 bushels; quality good.
Peas.—15 bushels; good quality; quantity inferior.
Beans.—10 bushels; inferior.
Hay.—1 ton; quality good.
Corn.—45 bushels; quality good.
Potatoes.—150 bushels; good quality.
Turnips.—500 bushels; fly and drought affected quality.
Carrots.—500 bushels; quality good.
Mangel Wurzel.—500 bushels; quality good.
Fruit.—Indifferent; considerably injured by insects.

Lambton.

Fall Wheat.—14 bushels; inferior quality; much ploughed up in spring
Spring Wheat.—15 bushels; middling.
Oats.—30 bushels; grain light.
Barley.—20 bushels; grain middling.
Peas.—18 bushels; affected by the bug.
Corn.—50 bushels; not much cultivated.
Hay. 1 ton; quality good.
Potatoes.—70 bushels; badly injured by the Colorado Beetle; some fields a total failure when not hand-picked. Other root crops not much cultivated. *Fruit.*—Pretty good, especially Apples and Pears. Plums moderate. Peach buds were killed in some places by the severe cold in winter.

Lennox.

Fall Wheat.—But little sown last year; mostly winter killed.
Spring Wheat.—15 bushels; quality good; "Fyfe" principally cultivated.
Oats.—40 bushels; quality good.
Rye.—10 bushels; quality good; badly winter killed.
Barley.—25 bushels; good quality; injured by heat and drought.
Peas.—15 bushels; quality good.
Beans.—35 bushels; quality good.
Hay.—1 ton; quality good; meadows were injured by frost and ice.
Corn.—30 bushels; quality good.
Potatoes.—250 bushels; quality good.
Mangel Wurzel.—700 bushels; quality good.
Carrots.—700 bushels; quality good
Turnips.—A general failure from the fly. Cabbage much injured by a worm. *Fruit.*—But indifferent; apples much injured by the Codlin Moth.

Lanark, South.

Fall Wheat.—Nearly all winter killed; more sown than of late.
Spring Wheat.—20 bushels; quality good.
Oats.—30 bushels; inferior.
Rye.—20 bushels; good, but little cultivated.

Barley.—30 bushels ; good.
Peas.—20 bushels ; good.
Corn.—25 bushels ; good;
Hay.—1 ton ; good.
Potatoes.—200 bushels ; a few rotted. Other root crops not much raised. The severe frosts of last winter were injurious to fruit trees ; the summer was favourable.

Middlesex North.

Fall Wheat.—23½ bushels ; quality middling ; injured by rust.
Spring Wheat.—21½ bushels ; sample good.
Oats.—40 bushels ; quality fair ; injured in some places by grasshoppers.
Barley.—30 bushels ; quality middling.
Peas.—22 bushels ; inferior : much injured by the bug.
Hay.—1½ ton ; quality good ; well saved.
Corn.—25 bushels ; fair quality.
Potatoes.—93 bushels good quality : Colorado Beetle very injurious in some localities.
Turnips.—385 bushels ; inferior quality.
Carrots.—500 bushels ; inferior quality.
Parsnips and Mangels.—Not much cultivated. *Corn* is being raised instead of *Peas* ; the latter having suffered so much of late from the bug. *Fruit*, on the whole, favourable. Peaches and Grapes somewhat suffered from early frost.

Middlesex. East.

Fall Wheat.—25 bushels ; quality middling.
Spring Wheat.—18 bushels ; quality middling ; "Fyfe" nearly run out, not average more than 12 bushels, "Red River" from 25 to 30 bushels.
Oats.—40 bushels ; quality good.
Barley.—25 bushels ; grain bright but very light—ripened too rapidly.
Peas.—15 bushels ; inferior quality ; full of bugs in southern part of the county.
Corn.—40 bushels ; quality good ; culture extending.
Hay.—1½ ton ; well secured.
Potatoes.—100 bushels ; quality varied ; Colorado Beetle did much mischief.
Turnips.—500 bushels ; quality sound ; early sown did best.
Carrots.—300 bushels ; did well when properly cultivated.
Mangel Wurzel.—500 bushels ; quality good.
Flax.—Pretty good crop, largely cultivated, as there are several scutching mills in the county. There is a prejudice against Flax in some places, as exhausting the soil. *Hops* are cultivated in the Townships of London and Nissouri ; crop pretty good. Dairying and pasturage are extending. Cheese factories pay well. *Fruit* generally pretty good. Apples yield largely, but much injured by the worm, as did the Curculio the plum. Grapes did well.

Middlesex, West.

Fall Wheat.—16 bushels ; quality fair ; inferior crop to last year's.
Spring Wheat.—18 bushels ; good sample.
Oats.—30 bushels ; good quality ; crops affected by drought.
Rye.—15 bushels ; grain heavy ; not much cultivated.
Barley.—30 bushels ; sample bright, but not heavy.
Peas.—20 bushels ; quality poor ; blossoms dropped without filling.
Beans.—25 bushels ; good quality ; not raised extensively.
Hay.—1½ tons ; well cured ; the season for making remarkably fine.
Corn.—45 bushels ; quality good ; stalks short, but ears large.
Potatoes.—50 bushels ; small, and very much injured by the Colorado Beetle.
Turnips, Carrots, Parsnips and Mangels.—From 300 to 500 bushels per acre ; considerably injured in places by drought. *Hops* yielded pretty well ; good quality, but the low prices of late years have tended to diminish cultivation. *Dairying* is extending ; several-

tensive dairies have gone into operation during the year, and it is believed that they are more profitable than arable husbandry. *Fruit* is extensively raised: crops generally good, but the drought affected the size of apples and other fruits.

Mo ck.

Fall Wheat.—15 bushels; quality poor.
Spring Wheat.—15 bushels; quality poor.
Oats.—30 bushels; good.
Rye.—20 bushels; quality an average.
Barley.—30 bushels; good.
Peas.—25 bushels; good.
Beans.—30 bushels; good.
Hay.—1 ton; good.
Corn.—80 bushels; good.
Potatoes.—50 bushels; good.
Turnips.—60 bushels; good.
Carrots.—80 bushels; good.
Mangels.—100 bushels; good.
Parsnips.—Not extensively grown, but, where tried, mostly successful. *Flax* and *Hops* very little cultivated. *Fruit* small, both in size and produce.

Niagara.

Fall Wheat.—15 bushels; quality fair; injured by spring drought
Spring Wheat.—18 bushels; sample good, but little cultivated.
Oats.—30 bushels; heavy.
Barley.—20 bushels; quality good.
Peas.—25 bushels; quality good; but few bugs.
Hay.—$\frac{3}{4}$ ton; well saved.
Corn.—25 bushels; good quality.
Potatoes.—75 bushels; good quality; early sort small from effects of drought.
Turnips.—300 bushels; good quality; crop diminished by fly and drought.
Carrots.—500 bushels; quality good.
Mangel Wurzel.—500 bushels; quality good.
White wheat somewhat affected by midge. Colorado Beetle made its appearance, but did little mischief.

Norfolk, North.

Fall Wheat.—15 bushels; quality poor; badly winter killed.
Spring Wheat.—15 bushels; quality fair; not much cultivated.
Oats.—20 bushels: sample light; much injured by drought.
Barley.—20 bushels; light; ripened too rapidly.
Peas.—18 bushels; fair sample; early sown the best.
Corn.—25 bushels; quality good.
Hay.—1 ton; quality good.
Potatoes.—40 bushels; quality good; slightly injured by Colorado Beetle
Turnips.—100 bushels; poor in quality and quantity.
Carrots.—200 bushels, quality good.
Mangel Wurzel.—400 bushels; quality good.
Hops.—Not many raised; crop good.
Fruit.—As a general rule below average.

Northumberland, West.

Fall Wheat.—25 bushels; quality good; greater part winter killed.
Spring Wheat.—22 bushels; very good sample.

Oats.—35 bushels; good quality.
Rye.—12 bushels; good quality.
Barley.—25 bushels; sample light.
Peas.—18 bushels; average quality.
Beans.—15 bushels; but few grown in fields.
Corn.—40 bushels; good sample.
Hay.—¾ ton; well saved.
Potatoes.—100 bushels; quality good; Colorado Beetle seen in a few places, but did not hurt the crop.
Turnips.—250 bushels; *Carrots*, 350 bushels; *Mangels*, 400 bushels; fair quality.
Hops.—Crops good, but few cultivated.
Fruit.—Season unfavourable; but few apples and no plums.

Oxford, North.

Fall Wheat.—15 bushels; quality inferior; badly winter killed
Spring Wheat.—22 bushels; quality good.
Oats.—25 bushels; sample light.
Barley.—20 bushels; quality very inferior.
Peas.—18 bushels; very unequal, in some places good, in others scarcely worth thrashing.
Hay.—½ ton; quality good; old meadows scarcely worth cutting.
Potatoes.—200 bushels; good quality; grew rapidly after the fall rains. Colorado Beetle pretty general, damage comparatively small.
Flax.—Cultivation increasing; quality excellent. The culture and after management are now better understood. *Hop* culture very limited and prospects dull. The manufacture of *Cheese* is beginning to be the most important interest of the agriculture of Oxford. *Fruit*; apples abundant, but matured too early on account of drought; size and flavour affected thereby.

Oxford, South.

Fall Wheat.—25 bushels; quality good.
Spring Wheat.—18 bushels; medium
Oats.—38 bushels; good sample.
Rye.—15 bushels; good sample, very little cultivated.
Barley.—24 bushels; good sample.
Peas.—25 bushels; good sample.
Beans.—16 bushels; culture very limited.
Corn.—40 bushels; quality good.
Hay.—1½ tons; quality good.
Potatoes.—80 bushels; quality good. Colorado Beetle appeared in large numbers in patches, and was locally very injurious. Next year it is feared the injury will be general.
Carrots.—600 bushels; quality good.
Mangel Wurzel.—800 bushels; quality good.
Turnips.—Only small quantities grown; *Parsnips* confined to gardens. *Hops*, an average crop, but not extensively raised. The manufacture of *Cheese* continues to improve and extend, and forms a principal interest. *Fruit* was generally pretty good, but peaches failed.

Perth, South.

Fall Wheat.—22 bushels; quality medium; white better than red.
Spring Wheat.—25 bushels; good sample; "Fyfe" principal variety.
Oats.—25 bushels; sample light.
Barley.—25 bushels; bright in colour but light; season too dry and hot.
Peas.—25 bushels; early sown poor, late sown good.
Corn.—40 bushels; not grown extensively, but increasing, a profitable crop.
Potatoes.—250 bushels; quality good; Colorado Beetle destroyed some fields, others not at all affected.
Turnips.—700 bushels; quality good.
Carrots.—750 bushels; quality good.

Mangel Wurzel.—1000 bushels ; quality good.

Flax.—Good crop ; 2 scutching mills in St. Mary's received 2,210 tons flax straw ; Mitchell and Stratford receipts from South Perth, 1,000 tons.

Fruit.—Season too dry and hot for most kinds of fruit, except grapes.

PETERBOROUGH, EAST.

Fall Wheat.—8 bushels ; second quality ; very badly winter killed

Spring Wheat.—18 bushels ; quality good.

Oats.—28 bushels ; quality good.

Barley.—30 bushels ; average quality ; not largely cultivated.

Peas.—18 bushels ; grain small ; weather too dry. Army worm injured the spring crops.

Hay.—¾ ton ; good quality ; clover winter killed.

Potatoes.—175 bushels ; good ; "Early Rose" and "Peach Blows" the favourite sorts. Colorado Beetle appeared, but did not do much mischief.

Turnips.—350 bushels ; quality good : season too dry.

Carrots.—500 bushels ; quality good.

Mangel Wurzel.—200 bushels ; quality good.

Parsnips.—Not grown as a field crop.

Hops.—Culture was extending ; soil suitable, but the depression of prices of late years was the cause of many yards being ploughed up. Season too hot and dry for bringing *Fruit* to perfection.

RENFREW, SOUTH.

Fall Wheat.—18 Bushels ; quality deficient ; new land average 25 bushels ; old land badly winter killed.

Spring Wheat.—12 bushels ; quality indifferent ; much injured by drought.

Oats.—35 bushels ; quality pretty good on well cultivated land and sown early.

Rye.—15 bushels ; fair ; but little cultivated,

Barley.—15 bushels ; pretty fair but not much grown.

Peas.—20 bushels ; quality pretty good.

Hay.—¾ ton ; well saved : injured by drought and frosts in spring.

Corn.—30 bushels ; fair sample ; not grown extensively.

Potatoes.—250 bushels ; quality good. The rot affected the common varieties on low heavy soils. The 'Garnet Chili" escaped and yielded well. Other root crops but little cultivated ; some excellent *Turnips* were shown at the exhibition. Caterpillars and grasshoppers considerably damaged spring grain in some sections. *Fruits* of all kinds, except the native plum, almost a failure.

SIMCOE, SOUTH.

Fall Wheat.—15 bushels ; medium quality ; much injured, and in some places destroyed, by frost.

Spring Wheat.—25 bushels ; quality good.

Oats.—50 bushels ; quality good

Barley.—50 bushels ; quality good.

Peas.—40 bushels ; quality good.

Hay.—1½ ton : well saved.

Corn.—Good, but not largely cultivated.

Potatoes.—150 bushels ; quality good. "Potato Beetle" caused some anxiety, but produced little injury.

Turnips.—175 bushels ; quality good.

Carrots.—170 bushels ; quality good.

Mangel Wurzel.—200 bushels ; quality good.

Cabbages, Squash, &c. grew to an enormous size. *Flax* good, but not much cultivated. The season was favourable to most kinds of fruit.

STORMONT.

Fall Wheat.—15 bushels ; quality indifferent. Badly winter-killed.

Spring Wheat.—15 bushels; quality rather inferior "Black Sea" generally cultivated in the eastern section of the Province, it being hardy and almost midge-proof.

Oats.—30 bushels; pretty good.

Rye.—25 bushels; fair sample.

Barley.—30 bushels; discoloured.

Peas.—20 bushels; good quality.

Hay.—1 ton, quality pretty good.

Corn.—40 bushels; its culture extending for soiling milch cows; considered profitable.

Beans, not much grown as a field crop.

Potatoes.—The wet weather caused considerable rot, and the harvesting in many places was late. Other root crops but little cultivated, on a small scale they seemed succesful. *Hops* not an average growth, and *Flax* only grown for domestic manufacture. *Fruit* generally very indifferent. More hay is being grown than formerly, and dairying is steadily increasing.

VICTORIA, SOUTH.

Fall Wheat.—15 bushels, quality good.

Spring Wheat.—15 bushels; quality good.

Oats.—30 bushels; quality good.

Barley.—25 bushels; quality good.

Peas.—25 bushels; quality good.

Hay.—1 ton; quality good.

Potatoes.—100 bushels. "Colorado Beetle" in some places very injurious.

Turnips.—200 bushels; quality good.

Carrots.—500 bushels; quality good.

Mangel Wurzel.—800 bushels; quality good.

No injury to grain from insects of any consequence. *Flax* only grown for domestic use. *Fruit;* season unfavourable.

WATERLOO, SOUTH.

Fall Wheat.—15 bushels; quality very poor: much winter-killed; ripened too early; rusted in low situations.

Spring Wheat.—20 bushels; quality good; not much cultivated.

Oats.—25 bushels; sample light; injured much by drought and heavy rain when cut.

Rye.—Not much cultivated; some are beginning to raise it for pasture and hay.

Barley.—25 bushels; sample light; colour bright, ripened too rapidly.

Peas.—20 bushels; quality middling; early sown the best Drought and the bug injurious.

Hay.—½ ton; quality poor; grasshoppers and the dry seasons in succession made this the poorest crop ever known in this county.

Potatoes.—150 bushels; quality excellent. "Early Rose," "Peach Blow," "Bruses" and "Peerless" surpassed other varieties.

Turnips.—600 bushels; early sown succeeded pretty well; late sown almost a failure.

Carrots.—500 bushels; quality fair; an average crop when well cultivated. Not sown so largely as formerly.

Flax.—Rather light; not extensively raised.

Hops.—A few yards in the county pay well, but a great difficulty in obtaining pickers, except in the immediate vicinity of villages or towns. *Western Corn* for green and winter fodder is beginning to be cultivated with great advantage. *Fruit* pretty fair; season too dry; and the "apple-worm" injurious.

WELLAND.

Fall Wheat.—18 bushels; quality good

Spring Wheat.—10 bushels; very poor.

Oats.—35 bushels; light.

Barley.—25 bushels; average quality.

Peas.—20 bushels; quality very good.

Beans.—15 bushels; do.

Corn.—40 bushels; middling.
Potatoes.—45 bushels; small but of good quality.
Turnips.—200 bushels; small but sound.
Carrots.—100 bushels, and *Mangels* 300 bushels; both of good quality.
The lateness of spring and drought of summer had a bad effect on spring grains. No appearance of Potato beetle. A large breadth of winter wheat sown this fall. *Fruit*, on the whole, much below an average. Peaches almost a failure. Cherries and plums very poor. Apple-worm and curculio very injurious in many places.

WELLINGTON, NORTH.

Fall Wheat.—15 bushels; quality middling; very much winter-killed; what survived badly rusted in many places.
Spring Wheat.—25 bushels; good sample, and well harvested.
Oats.—40 bushels; sample light.
Barley.—35 bushels; bright but rather light.
Peas.—25 bushels; plump and heavy.
Hay,—1½ tons; quality good and well secured.
Potatoes.—300 bushels; excellent quality. Colorado Beetle destructive in some places, in others unknown.
Turnips and *Carrots*, inferior crop; much affected by drought. *Mangel Wurzel* a pretty fair crop. *Flax*, not much raised but does well. As new land becomes cleared root crops increase Not much *Fruit* yet raised; quality pretty fair.

WELLINGTON, CENTRE.

Fall Wheat.—20 bushels; average quality.
Spring Wheat.,—15 bushels; average quality.
Oats.—35 bushels; average quality.
Barley.—25 bushels; quality middling.
Peas.—25 bushels; rather small.
Hay.—1 ton: good quality.
Potatoes.—Below an average; much injured by drought.
Turnips.—In some places where early sown, a fair crop; in others a failure This root is extensively cultivated: but *Carrots*, *Parsnips* and *Mangels* only on a small scale. *Flax*, cultivation of, diminishing. *Fruit* below an average.

WELLINGTON, SOUTH.

Fall Wheat.—13 bushels; quality inferior; badly winter-killed and rusted.
Spring Wheat.—11 bushels; fair quality. "Fyfe" generally raised. Nearly run out.
Oats.—20 bushels; middling; short of straw and ripened unevenly.
Barley.—20 bushels; good colour, but very light.
Peas.—16 bushels; much injured by bugs in many places.
Hay.—½ ton; much injured by excessive drought.
Potatoes.—90 bushels; quality good; nearly destroyed in some places by the Colorado Beetle.
Turnips.—300 bushels; good quality; not very much injured by drought.
Carrots.—400 bushels; good quality; not, like turnips, largely cultivated.
Flax but little cultivated. *Hops*, only two gardens in the county; crop and quality pretty good. *Fruit*, in consequence of the drought was small in size. *Pears* and *Plums* did pretty well; the latter, however, were injured by the Curculio, and *Apples* suffered from the Codlin Moth.

WENTWORTH, NORTH.

Fall Wheat.—17 bushels; sample medium: Soules blighted in places, ears not fully filled. Midge affected some that was injured by frost.
Spring Wheat.—20 bushels; quality good; not largely cultivated.

Oats.—30 bushels; indifferent; damaged by wet in harvest.
Rye.—25 bushels; good sample, not much grown.
Barley.—28 bushels; good colour but light in the grain, from ripening too quickly.
Peas.—20 bushels; some considerably injured by wet in harvesting.
Corn.—70 bushels; very good quality.
Hay.—$\frac{1}{2}$ ton; good quality. Grass seed not having taken well for two years, and the extreme heat of the past summer caused the meadows to be thin of plant.
Potatoes.—250 bushels; quality good; Colorado Beetle made its appearance but did no very material harm.
Turnips.—400 bushels; quality good.
Carrots.—500 bushels; quality good
Mangel Wurzel.—500 bushels; quality good.
Hops.—Only about 5 acres under cultivation; a fair crop.
Fruit.—Weather too dry for small fruit: grapes did remarkably well. Curculio injured stone fruit.

Estimated average of grain per acre, made up from Returns of Electoral Division Societies to the Bureau of Agriculture, for the years 1869, 1870, 1871 *and* 1872.

	1872—39 Returns.	1871—47 Returns.	1870—48 Returns.	1869—51 Returns.
Fall Wheat	18 bushels	27$\frac{3}{4}$ bushels	15$\frac{3}{4}$ bushels	21$\frac{3}{4}$ bushels.
Spring Wheat	19 do	17$\frac{3}{4}$ do	12 do	19$\frac{1}{4}$ do
Oats	33 do	31$\frac{1}{2}$ do	29 do	39 do
Rye	17 do	19$\frac{3}{4}$ do	12 do	18 do
Barley	28 do	30 do	22 do	30$\frac{1}{2}$ do
Peas	21 do	24$\frac{3}{8}$ do	19 do	22$\frac{1}{4}$ do

APPENDIX TO REPORT

OF THE

Commissioner of Agriculture and Arts.

APPENDIX (I.)

AMOUNTS EXPENDED FOR THE ENCOURAGEMENT OF AGRICULTURE AND ARTS IN ONTARIO IN 1872.

No. 1.—Amounts paid to Agricultural Societies in 1872.

Name of Society.	Amount.	Name of Society.	Amount.
	$ cts.		$ cts.
Addington	700 00	*Brought forward*	18,355 00
Algoma*	540 00	Huron, N.	700 00
Brant, N.	700 00	Do S.	700 00
Do S.	700 00	Kent	700 00
Bruce, N.	700 00	Kingston	350 00
Do S.	700 00	Lambton	700 00
Brockville	350 00	Lanark, N.	700 00
Bothwell	700 00	Do S.	700 00
Carleton	700 00	Leeds, N., and Grenville	700 00
Cardwell	700 00	Do S.	700 00
Cornwall	350 00	Lennox	700 00
Durham, E.	700 00	Lincoln	700 00
Do W.	700 00	London	350 00
Dundas	700 00	Middlesex, N.	700 00
Elgin, E.	700 00	Do E.	700 00
Do W.	700 00	Do W.	700 00
Essex	700 00	Monck	700 00
Frontenac	700 00	Niagara	350 00
Glengarry	700 00	Northumberland, E.	700 00
Grenville, S.	700 00	Do W.	700 00
Grey, N.	700 00	Norfolk, N.	700 00
Do S.	700 00	Do S.	700 00
Haldimand	700 00	Ontario, N.	700 00
Halton	700 00	Do S.	700 00
Hamilton†	315 00	Oxford, N.	700 00
Hastings, N.	700 00	Do S.	700 00
Do E.	700 00	Ottawa	350 00
Do W.	700 00	Peel	700 00
Carried forward	18,355 00	*Carried forward*	35,855 00

* This Society did not qualify so as to receive the full amount of the grant, $700.
† This Society did not qualify so as to receive the full amount of the grant, $350.

No. 1.—Amounts paid to Agricultural Societies in 1872.—*Continued.*

Name of Society.	Amount.	Name of Society.	Amount.
	$ cts.		$ cts.
Brought forward	35,855 00	*Brought forward*	44,805 00
Perth, N.	700 00	Victoria, N.	700 00
Do S.	700 00	Do S.	700 00
Peterborough, E.	700 00	Waterloo, N.	700 00
Do W.	700 00	Do S.	700 00
Prescott	700 00	Welland	700 00
Prince Edward	700 00	Wellington, N.	700 00
Renfrew, N.	700 00	Do C.	700 00
Do S.	700 00	Do S.	700 00
Russell	700 00	Wentworth, N.	700 00
Simcoe, N.	700 00	Do S.	700 00
Do S.	700 00	York, N.	700 00
Stormont	700 00	Do E.	700 00
Toronto	550 00	Do W.	700 00
Carried forward	44,805 00	Total	53,905 00

No. 2.—Amounts paid to Mechanics' Institutes, to complete Service of 1871.

Name of Institute.	Amount.	Name of Institute.	Amount.
	$ cts.		$ cts.
Brighton	120 86	*Brought forward*	1,125 44
Clinton	122 58	Port Elgin	131 70
Columbus	200 00	Preston	400 00
Elora	400 00	St. Mary's	400 00
Greenwood	112 00	Seaforth	100 00
Kincardine	170 00	Vittoria	234 00
Carried forward	1,125 44	Total	2,391 14

No. 3.—Amounts paid to Mechanics' Institutes in 1872.

Name of Institute.	Amount.	Name of Institute.	Amount.
	$ cts.		$ cts.
Bowmanville	400 00	*Brought forward*	3,294 50
Brampton	120 00	Guelph	134 34
Brantford	244 38	Hamilton	400 00
Brighton	137 28	Hespeler	400 00
Clinton	400 00	Kincardine	210 50
Collingwood	206 84	London	400 00
Columbus	116 00	Meaford	200 00
Dundas	400 00	Milton	300 42
Elora	400 00	Mount Forest	198 80
Galt	400 00	Newmarket	200 00
Greenwood	70 00	Niagara	400 00
Grimsby	400 00	Norwood	233 20
Carried forward	3,294 50	*Carried forward*	6,371 76

No. 3.—Amount paid to Mechanics' Institutes in 1872.—*Continued.*

Name of Institute.	Amount.	Name of Institute.	Amount.
	$ cts.		$ cts.
Brought forward	6,371 76	*Brought forward*	8,971 66
Owen Sound	200 00	Seaforth	100 00
Paris	200 00	Smith's Falls	100 00
Peterborough	400 00	Stratford	154 30
Port Elgin	126 40	Streetsville	400 00
Port Perry	400 00	Thorold	200 00
Preston	400 00	Toronto	400 00
Richmond Hill	73 50	Waterdown	80 00
St. Catharine's	400 00	Whitby	200 00
St. Mary's	400 00	Woodstock	400 00
Carried forward	8,971 66	Total	11,005 96

No. 4.—Total Payments for encouragement of Agriculture and Arts made in 1872.

Service.	Appropriation.	Expended in 1872.	Unexpended or Over-expended.
	$ cts.	$ cts.	$ cts.
Electoral Division Societies, 73 at $700	51,100 00	50,940 00	160 00
Do 1 at $550	550 00	550 00	
Do 7 at $350	2,450 00	2,415 00	35 00
Fruit Growers' Association	500 00	500 00	
Entomological Society	500 00	500 00	
Agricultural and Arts Association	10,000 00	10,000 00	
Mechanics' Institutes for 1871	2,591 14	2,391 14	200 00
Do 1872	15,000 00	11,315 96	3,684 04
Sundry services	1,000 00	1,150 00	150 00*
Total	83,691 14	79,762 10	3,929 04

* Over-expenditure.

F. T. JONES,
Accountant.

Department of Agriculture and Public Works,
Toronto, 3rd January, 1873.

FIFTH ANNUAL REPORT

OF THE

INSPECTOR

OF

ASYLUMS, PRISONS, &c.,

FOR THE

PROVINCE OF ONTARIO,

1871-72.

Printed by Order of the Legislative Assembly.

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1873.

OFFICE OF THE INSPECTOR OF ASYLUMS, PRISONS, &C., ONTARIO.

TORONTO, December 24th, 1872.

SIR,—I have the honour to transmit herewith, to be presented to His Excellency the Lieutenant Governor, my Fifth Annual Report of the Prisons, Asylums, Hospitals, and other Charitable and Penal Institutions, placed by law under my supervision and inspection, being for the year ending 30th September, 1872.

I have the honour, to be,
Sir,
Your most obedient servant,

J. W. LANGMUIR,
Inspector.

The Honourable,
T. B. PARDEE, M.P.P.,
Secretary for the Province of Ontario.
&c. &c.

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FIFTH
ANNUAL REPORT
OF THE
Inspector of Asylums, Prisons, &c.
FOR ONTARIO.

OFFICE OF THE INSPECTOR OF ASYLUMS, PRISONS, &C., ONTARIO,
Toronto, November, 1872.

To His Excellency the Honourable WILLIAM PEARCE HOWLAND, C.B.,
Lieutenant-Governor of the Province of Ontario, &c., &c.

MAY IT PLEASE YOUR EXCELLENCY:

I have the honour herewith to present to your Excellency my Fifth Annual Report the operations of the several Prisons, Asylums, Hospitals, the Institutions for the Education of the Deaf and Dumb, and the Blind, and the other Charitable and Penal Establishments of the Province, placed by Statute under my supervision and inspection, embodying a statement of their respective proceedings for the official year ending 30th September, 1872.

The very crude and ill-defined method of granting Government aid to Hospitals and Charitable Institutions that existed in the past in Canada, and now obtains in this Province, has provoked, both in the country and the Legislature, many expressions of dissatisfaction. With a view to remedying the defects of the system—or rather want of system—and placing the Public Institutions interested in the Legislative Grant upon a better and surer footing, both with the public and the Legislature, I was instructed by your Excellency's Government to make full inquiry into the subject, in all its bearings. The result of that inquiry is incorporated in this report, under the heading of "Hospitals and Charities," and contains certain recommendations and suggestions, which, if adopted, I am of opinion will overcome many of the existing defects and anomalies.

In conformity with the provisions of the Act entitled "An Act to provide for the establishment and government of a Central Prison for the Province of Ontario," I submit a report of the proceedings of the past year in connection with the establishment and organization of that important Public Institution, now being erected in Toronto. That portion of the

report relating to the industrial employment of the prisoners, and the various recommendations therewith connected, have already received the approval of your Excellency, and a contract has been entered into for a lease of the prisoners' labour for a period of seven and a-half years. A full history of the negotiations which led to this step, and rendered its consummation desirable at so early a day, is given, and I believe that both in respect of the character of the industrial pursuits proposed to be carried on, and of the remuneration to be received for the labour of the prisoners, the scheme will prove eminently successful in furthering the objects and producing the results aimed at in the establishment of the Prison.

Inspired by the laudable, and in many respects successful, efforts of Governments and philanthropists in the United States and Great Britain to reclaim inebriates, public opinion in this Province, expressed through petitions of municipal authorities, and through the public press, within the past few years, has clearly indicated the necessity of similar action amongst ourselves. Doubtless in compliance with these unmistakable evidences of public opinion in regard to the matter, verified in the strongest manner by the observations and experience of all public men, the Government directed me to visit a few of the institutions in the United States, known as Inebriate Asylums. I was also directed to examine into the organization of these establishments and the method of treatment pursued, and to obtain general information upon the subject in all its bearings, both in relation to the patients treated and to society at large. The results of my observation and inquiry in relation to this important subject are herewith transmitted for your Excellency's information ; and it is most sincerely to be hoped that the efforts of the Government in this direction will be crowned with success.

Although so much has already been done in this Province, since Confederation, to provide adequate accommodation for our insane, still the number of patients now under treatment in the various Institutions, and the constant additions being made to the application lists, warn us that we cannot stand still in this humane work. Already, nearly every bed in the female wards of our Asylums is filled: with many urgent cases seeking admission in vain.

I have no desire to advocate an increase in the *number* of Asylums for the Insane, or the creation of new and independent organizations for their care. I do not think that they are required at present. But it is very clear that the people of this Province will not suffer her insane to be neglected, so long as they are blessed with their present prosperity and abundance, through which they are so well enabled to provide adequate accommodation for this unfortunate class. While fully believing this, I am well aware that the large and increasing annual expenditure for the maintenance of Asylums, now amounting to nearly $200,000 per annum, demands that the greatest caution and prudence should be exercised in creating new sources of expenditure, either in the erection of new buildings or in daily maintenance. Keeping this steadily in view, I submit, in my report upon Asylums, a scheme to provide increased accommodation, which, while much less costly than the erection of a new and independent establishment, will, in my opinion, satisfy our present requirements in an equally, if not more satisfactory manner.

I now submit my first report of the operations of the Ontario Institution for the Blind at Brantford, which was opened for the reception of pupils on the 1st of May last.

In connection with my remarks upon the Idiot Asylum, which forms a branch of the

London Asylum for the Insane, I have again brought to your Excellency's notice the great and increasing necessity that exists for the establishment of a training School for idiots and imbecile children.

The cost to the Province, for the official year ending 30th September, of maintaining the various Institutions now reported upon, was as follows:—

Asylums for the Insane	$187,719 42
Institution for the Deaf and Dumb	24,895 55
Institution for the Blind	7,522 52
Provincial Reformatory	22,494 14
Aid to eight General Hospitals	27,400 00
Aid to 19 Benevolent Institutions	14,700 00
*Common Gaols	107,231 79
	$391,963 42

The reports of Medical Superintendents of Asylums for the Insane, of Principals and Physicians of the Institutions for the Deaf and Dumb, and the Blind, and of the Warden, Chaplains, and Surgeon of the Provincial Reformatory, Penetanguishene, form the appendix to this report, each giving an account of the operations of their respective establishments.

* About half this amount is paid by Counties.

ASYLUMS FOR THE INSANE.

The operations of the several Asylums for the Insane for the year are exhibited in the three annexed tables, which respectively furnish the following information:—

1st. The number of insane persons remaining under treatment, and their respective Asylum residence at the end of the last official year (30th September, 1871.)

2nd. The admissions, and the total number under treatment during the present official year ending 30th September, 1872.

3rd. The deaths, discharges and elopements during the same period.

4th. The number remaining under treatment, and their respective Asylum distribution on the 30th September, 1872.

Name of Asylum.	Number of Patients remaining in Asylums on the 30th Sept., 1871.			Number of Patients admitted during the present Year.			Total number of Patients under Treatment during the present year.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Asylum for the Insane, Toronto	288	309	597	98	50	148	386	359	745
Asylum for the Insane, London	207	250	457	62	53	115	269	303	572
Idiot Asylum, Branch of do	.....	.....	.....	17	11	28	17	11	28
Asylum for the Insane, Kingston	161	151	312	9	51	60	188	184	372
	656	710	1366	186	165	351	860	857	1717

Name of Asylum.	Deaths.			Discharges.			Elopements.			Total Number of Deaths, Discharges, and Elopements for the Year.
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	
Asylum for the Insane, Toronto	27	11	38	44	34	78	2	.....	2	118
Asylum for the Insane, London	11	16	27	23	22	45	3	1	4	76
Idiot Asylum, Branch of do	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Asylum for the Insane, Kingston	10	11	21	6	7	13	.....	.....	.....	34
	48	38	86	73	63	136	5	1	6	228

GENERAL SUMMARY.

Name of Asylum.	Total Number of Patients in Asylums on the 30th September, 1871.	Total Number admitted during the present year.	Total Number of Patients who died, were Discharged and Eloped during the present year.	Number of Patients remaining in the several Asylums on the 30th September, 1872.
Asylum for the Insane, Toronto	597	148	118	627
Asylum for the Insane, London	457	115	76	496
Idiot Asylum, Branch of do	.....	28	.....	28
Asylum for the Insane, Kingston	312	60	34	338
	1366	351	228	1489

The foregoing tables show that the number of insane confined in the various Asylums of the Province had increased since the 30th September 1871 from 1366 to 1489 ; being an increase of 123 or a little over 9 per cent. during the year.

Twenty-eight of this number, it should however be observed, were transfers from the Common Gaols to the Idiot Asylum, which was opened on the 1st September last.

The prison returns for the year show that, in addition to the 1489 insane persons under treatment in the Asylums at Toronto, London and Kingston, there were also 46 confined in the gaols of the Province. And to this number should be added 17 insane convicts supported by the Dominion Government in Rockwood Asylum, who were sentenced to the Kingston Penitentiary from the Courts of Ontario, and while undergoing sentence there became insane.

This would make a total of 1552 insane persons under public accommodation in the Province of Ontario on the 30th September 1872, of whom I have official knowledge ; distributed as follows :—

Asylum for the Insane, Toronto	627
Asylum for the Insane, London	524
Asylum for the Insane, Kingston	338
Confined in Common Gaols	46
Convict Lunatics in Rockwood Asylum	17
Total	1552

These figures show that there is one Insane person *under asylum treatment* for every 1044 of the population, taking the census returns of 1871 as a basis. It would seem to be almost impossible to obtain a correct census of the Insane and Idiots living in private houses and it is perhaps illusory to expect any improvement in this respect in the Census Enumeration of 1871 —the details of which have not yet come to hand. Nor is this confined to Ontario ; for, with a few exceptions, the statements of the *entire* number of Insane in other countries are very imperfect, and in many instances are only unreliable estimates. Comparisons of the actual number of Insane in various countries are in consequence comparatively valueless.

But as an indication of the degree of *humanity* existing in various civilized countries in taking care of their Insane, the following statements will prove both interesting and instructive. It has already been shown, that in this Province there is one Insane person *under treatment* or in possession of Asylum accommodation to every 1044 of the population.

According to the latest returns England has one under treatment to every 615 of her population ; Scotland, one to every 606 ; Ireland, one to every 729 ; Belgium, one to every 917 ; Holland, one in every 1130 ; Denmark, one in every 1613 ; United States, one in every 2173 ; Italy, one in every 2962 ; Sweden, one in every 3219 ; and Prussia, one in every

3354. If the various and complicated causes which produce insanity were in all respects the same in the countries named, these figures would have a peculiar significance. It is in the highest degree creditable to this Province, that, in this most humane work, it stands fourth on the list. Indeed, it may safely be said that in no country in the world is there more adequate or better provision for the Insane than in the Province of Ontario.

The following figures exhibit the Nationalities, Religious distinctions and Civil state of the 1489 patients remaining in the various Asylums, on the 30th September :

Nationalities.

Born in England	188
" " Ireland	525
" " Scotland	165
" " Canada	494
" " United States	26
Other countries and unknown	91
Total	1489

Religious distinctions.

Church of England	377
Roman Catholic	421
Presbyterians	284
Methodists	222
Others and unknown	185
Total	1489

Civil state.

Married and widowed	682
Single	807
Total	1489

While these figures may prove interesting and perhaps instructive, they are yet capable of being grossly misapplied unless they are searchingly analysed. The causes of insanity are confined to no particular nation or creed. Poverty, intemperance, physical diseases, losses, and hereditary taint, wherever found, rather than the accidents of nationality and religion, have chiefly to do with its production.

Asylum statistics, however, both in this and other countries, in relation to the Civil state, appear to prove conclusively that a greater number of single than married persons become insane.

The following summary exhibits the entire operations of all the Asylums in the Province, since the opening of the Provincial Asylum at Toronto, in the year 1841—a period of thirty one years.

Admitted at Toronto Asylum (including University Branch, now abandoned.)	3978
Malden Asylum, (now closed) not including transfers from Toronto Asylum ..	285
Orillia Asylum, (now closed) not including transfers from Toronto Asylum	44
London Asylum, not including transfers from Malden and Orillia	278
Rockwood Asylum, (Ontario Patients)	534
Total number of patients admitted to the Asylums of the Province since 1841 ...	5119

These 5119 admissions to Asylum residence were disposed of as follows ;

Died	1154
Discharged	2411

Eloped	65	
Remaining in Asylums on the 30th September, 1872	1489	
		5119

The counties in the Province, from which these 5119 insane persons were received, are shewn in the following list:—

Algoma	5	Ontario	150
Brant	96	Oxford	91
Bruce	28	Peel	129
Carleton and City of Ottawa	135	Perth	101
Elgin	82	Peterborough	90
Essex	69	Prescott and Russell	30
Frontenac and City of Kingston	216	Prince Edward	46
Grey	69	Renfrew	43
Haldimand	56	Simcoe	151
Halton	112	Stormont, Dundas and Glengarry	136
Hastings	101	Victoria	39
Huron	120	Waterloo	83
Kent	65	Welland	75
Lambton	84	Wellington	176
Lanark	65	Wentworth and City of Hamilton	325
Leeds and Grenville	95	York and City of Toronto	1135
Lennox and Addington	40	Quebec	8
Lincoln	150	Penitentiary, Kingston	32
Middlesex and City of London	220	Unassignable	108
Norfolk	56		
Northumberland and Durham	307	Total	5119

From these figures, it will be seen that the nearer any county or town is to an Asylum, the greater will be the proportion of patients. Thus, nearly one-fourth of all the patients admitted to the Toronto Asylum during the past thirty-one years have come from the County of York; and of these, again, the great majority, no doubt, have been from the City of Toronto.

Admissions.

The total number of patients admitted to Asylum residence during the year was 351, viz: 186 men and 165 women, against 353 for the previous year.

Of this number, 192 were admitted under the ordinary process, viz: by award of medical superintendents on the certificate of three medical practi ioners, signed and verified by the mayor or reeve of the municipality in which the insane person resided. The remaining 159 had been committed to Gaols as persons dangerous to be at large, or had been charged with indictable offences of which they were acquitted on the ground of insanity. In both cases these insane prisoners were transferred from Gaol to Asylum residence on the warrant of His Excellency the Lieutenant Governor.

The benefits arising out of the system of transfer by warrant have been very great, as is shown by the fact that at the close of the present official year only 46 prisoners were in confinement in the thirty-eight Common Gaols of the Province as insane persons, as compared with 61 at the same period of last year.

The Prison Returns for the years prior to 1868 shew that there were never less than 56, and very frequently over 100 insane persons in custody at one time in the County Gaols.

Of the 46 in confinement on the 30th September last, not over ten were proper subjects for Asylum treatment, all of whom were in course of transfer. Nearly all the rest, although certified under the Statute to be insane, some in a qualified manner, and others without qualification, were cases of senile insanity, or of the mildest form of dementia, chiefly in the persons of wandering vagrants Some of the latter class were committed to Gaol by magistrates and still remain there, although the local examining authorities refuse to certify to their insanity.

Since the system of transfer by warrant was adopted in 1869, no less than 657 insane have been removed from the Common Gaols to Asylums. That the method, in some of its details, is imperfect cannot be denied; but that the number of chronic insane in the three Asylums, in proportion to the number of admissions, has been increased through its operations, does not appear from the Asylum statistics of the past three years. For we find that the Toronto Asylum, which since the 6th of August 1869, has had 127 warrant patients committed to it, has rather increased the ratio of its discharges, in proportion to its population, at the end of each official year, or to its annual admissions. Thus, for the fifteen months ending 30th of September, 1868, during which period no warrant patients were committed to that institution, we find that the percentage of discharges in proportion to the population was 13·46, and on admissions, for the same period, 45·95 per cent For the year ending 30th September, 1869, during which time only one warrant patient was committed, the percentage of discharges to the population was 10·05, and to admissions 66.40. Fifteen warrant patients were admitted during the year ending 30th September, 1870, when the percentage of discharges to population was 11·90, and to admissions 52·07.

The number of insane committed by warrant for the year ending 30th September 1871 had increased to 58, during which term the percentage of discharges to the population had increased to 12·84, and decreased on admissions to 45·28. The result of the present year's operations of the Toronto Asylum shews that 53 warrant patients were admitted, while the proportion of discharges to the population was 12·45, and to the admissions 52 94 per cent. Thus, while in some years the percentage of its discharges in proportion to population had decreased, the same years exhibited an increase in discharges in proportion to admissions. It would thus appear, at any rate in the Toronto Asylum, that the working of the warrant system of removal has not interfered with the curative character of the Asylum, by the introduction of a greater number of chronic and incurable insane to its wards, in proportion to the entire number in residence, than were admitted before the existence of the system.

The growing demand for Asylum accommodation, due undoubtedly in a great measure to the increased accommodation furnished by the Province, rather than to any positive increase in insanity in greater ratio than the increase of population, admonishes us, however, that the most careful supervision and strictest scrutiny must be exercised in the admission of patients. Only in this way will Asylums retain their hospital character, and perform the functions for which they were designed.

In my report of last year, in speaking of the warrant system, I directed attention to the necessity of instituting a more searching and rigid investigation on the part of the local examining authorities before granting certificates of insanity. In conformity with this commendation the following circular, addressed to Judges, Sheriffs, and Gaol Surgeons, was issued from the Provincial Secretary's Department.

"*Toronto, 27th July*, 1871.

"Sir,—I have the honour to call your attention to the following Extract from a Report of the Inspector of Asylums and Prisons, with reference to the procedure adopted in the examination of persons committed to gaol as dangerous lunatics with a view to granting certificates of insanity, and to state that the Government will not feel itself justified in ordering the removal of lunatics from the County Gaols to the Asylums for the Insane, unless it appears that the fullest information with regard to them has been sought through the means suggested by the Inspector in his Report.

"The practice of holding an examination for the purpose of granting Certificates of "Insanity respecting persons sent to Gaol as dangerous Lunatics, by Justices of the Peace, "and the granting of such certificates without having the friends of the Lunatic present and "placed upon oath to give evidence upon all the circumstances connected with the case, is, in "my opinion, open to very serious objection; and although, in most instances, the general "appearance and manner of the person is a sure indication of an unsound mind, still there are "cases when it is necessary to make a full investigation into the previous history of the person; "and, in all cases, the evidence elicited would be of the greatest assistance to the Medical "Superintendent of the Asylum, to which it is proposed to send the insane person, in the treat-"ment of the case when the patient comes under his care."

The instructions contained in the foregoing circular were not generally acted upon,

inasmuch as no law exists to compel witnesses to appear before the examining authorities to give evidence, nor is provision made for the payment of such witnesses. The criminal laws of the Province very properly require the most searching investigation, and the production of the clearest proofs of guilt, before a person charged with crime, no matter how trifling the offence, can be sentenced to prison and deprived of liberty. Surely, therefore, before an alleged lunatic is consigned to an Asylum, it is equally important that a similar course should be pursued. The existing method of committing persons to gaol as being insane, on the uncorroborated statement of one informant, is open to the most serious objection. In many instances the Magistrate who commits is ignorant of the first principles of the law he is called upon to administer, and quiet harmless imbecile vagrants are pronounced, and committed as, dangerous Lunatics. In other cases, some trifling assault, perhaps committed under great provocation, with very strong extenuating circumstances, is construed into an attempt to kill, or to do grievous bodily harm, and forthwith the elastic provisions of the Statute are invoked, and the man is sent to gaol as a lunatic. And not unfrequently, and, perhaps, with a better show of reason on the part of the Magistrate, the victim of a continued drunken debauch is acquitted of *inebriacy* and convicted of *lunacy;* and, in addition, as if these gross misapplications of the law were not a sufficient display of ignorance, fully twenty-five per cent. of the commitments are irregular, and not in accordance with the Statute, which irregularity, were it not for the charitable provisions of the Act of 1870-71 overlooking it, would leave the real lunatic in gaol for an indefinite period.

Having regard to the extreme sensitiveness of public opinion in respect to all matters pertaining to Lunatic Asylums, it is but right that the laws of the country should very minutely and explicitly define the method of commitment in all cases, and that such laws should be properly administered.

Having this in view, I would respectfully recommend that the laws relating to the commitment of alleged insane persons to gaol be amended in the following manner, viz.:—

1st. That before the commitment of a person charged with insanity takes place, an examination shall be held before *two* Magistrates, or one Magistrate and a Coroner, who shall, examine witnesses under oath, and otherwise shall make a full inquiry into the case, eliciting information as to the commencement and duration of the attack of insanity, and the circumstances or causes which produced it. Information should also be obtained whether insanity existed in other members of the family, the manner in which it was first displayed in the case under examination; and, if said to be violent and dangerous, how these proclivitise are exhibited. It is also desirable to know if the insane person is possessed of any property, and to what extent, or whether his or her friends are able and willing to pay for Asylum maintenance.

All the information thus obtained to be taken down in writing, and transmitted along with the commitment to the Sheriff of the County.

2nd. That this information shall be submitted to the examining authorities, composed of the Chairman of the Quarter Sessions and associated Magistrate, and two medical practitioners, one of whom should be the Gaol Surgeon, and that these Examiners shall be authorized, if considered necessary to the proper treatment of the case, to elicit additional or corroborative evidence on oath, before formally certifying to the insanity of the prisoner.

3rd. That all the evidence and information thus procured shall be transmitted by the Sheriff to the Provincial Secretary, along with the other papers required by the Statute, and the formal application for the removal of the insane prisoner from the gaol to an Asylum.

I would here again repeat the recommendation contained in my last report in relation to the mode of awarding admission under the "ordinary process" The Statute requires, in relation to the method of granting certificates, "that such certificate shall state that the inspecting medical practitioners, *at the same time, and in presence of each other*, examined the patient, and, after due inquiries into all necessary facts relating to his case, found him to be insane."

Although no case of the illegal commitment or detention of a sane person in any of the Asylums of the Province is known to me, still there is great necessity for not only guarding against such an occurrence, but also for obtaining from each of the medical examiners a distinct and separate statement of the reasons why he considers the person insane, giving the symptoms, delusions, or the insane act that has come under his observation, uninfluenced by mutual conversation, or the reception of statements each examiner has not discovered for himself.

Under the present method, the person for whom a certificate is required is generally under the special care of one of the medical examiners, and the others are called in to sign the papers. I am of opinion, that the liberty of the subject would be better guarded, and much valuable information obtained to guide the medical superintendent in the treatment of the case, if the law were amended, requiring each medical examiner to make a separate examination of the patient, and transmit to the medical superintendent a report of the same, giving the reasons why he subscribed to the certificate of insanity.

It may be urged by some that the surrounding of admission to Asylums for the Insane with so many forms will have a tendency to delay and impede the placing of urgent acute cases under immediate treatment. But I apprehend that the enactment of such necessary checks will occasion no such difficulties, and I would commend their adoption to the favourable consideration of Your Excellency's Government.

The number of applications received during the year by medical superintendents was as follows:—

Toronto Asylum, including the application of Sheriffs for Warrant Patients	282
London Asylum " " "	168
Kingston Asylum, Warrant Patients alone	60
Total	510
Number of patients admitted at Toronto	148
" " London	143
" " Kingston	60
	351
	159

It is thus shewn that applications for admission were rejected, owing to their being for improper subjects, or, in the case of females, to the want of accommodation. In some instances admission has been awarded, and the friends of the insane have refused to avail themselves of it, owing sometimes to the partial or complete recovery of the patient, but oftener, it is feared, to the ignorance that prevails respecting the design and interior management of Asylums, or to the vain hope, that the patient will recover without being placed under Asylum treatment.

Discharges.

The discharges from the three Asylums for the year numbered 136, and are classified by the medical attendants as follows:—

Discharged Cured	107
" Improved	24
" Unimproved	5
Total	136

Leaving out the five patients discharged unimproved, we have the following result of Asylum treatment for the year:—

Percentage of recoveries in proportion to the entire number of patients treated, viz., 1,717	7·61
Percentage of recoveries in proportion to the number of patients remaining in the Asylums on the 30th September, viz., 1,489,	8·79
Percentage of recoveries in proportion to the admissions of the year, viz., 351	37·32

These figures compare favourably with similar statistics furnished by the Asylums of Great Britain and the United States.

I would here draw attention to an objectionable feature of the warrant system in relation

to Asylum discharges. With patients admitted under the ordinary process, the system obtains of allowing certain convalescing patients, and others, who, in the opinion of medical superintendents, would be benefitted thereby, to visit their relatives or friends on leave of absence. The names of such patients during their absence still remain on the Asylum rolls, and vacant beds are retained for them; so that in the event of a relapse or a return of unmanageable mania the patients are at once brought back to the Asylum.

Medical superintendents report that the most beneficial effects have resulted from this system of granting leave of absence to patients, and it is to be regretted that the privilege cannot be extended to patients committed under the warrant of the Lieutenant-Governor. But inasmuch as they are prisoners in the eye of the law, only transferred from a prison to an Asylum, this cannot be done.

While the observance of this custodial form may be and undoubtedly is proper and right in respect to insane persons who had been charged with the commission of some serious crime, but were acquitted of it on the ground of insanity, I do not think that there is any necessity for its strict observance with that class of warrant patients generally committed as lunatics "dangerous to be at large." In the former case the application of the leave of absence principle might be attended with danger to life and property, by the revival of the dangerous proclivities of the patient. In the latter, comprising ninety per cent. of the entire committments by warrant no dangerous propensities ever existed, at any rate to a greater extent than with insane persons admitted to the Asylum under the ordinary process. For that class of warrant patients I would strongly urge that the law be amended so as to enable medical superintendents in their discretion, to grant leave of absence, when such a course would be attended with beneficial results.

The following table shows the period of Asylum residence of the 131 patients discharged during the year :—

Periods of Asylum Residence of the 136 patients who were discharged during the year :

4	Patients	Under 1 month.
10		" 2 "
15		" 3 "
8		" 4 "
10		" 5 "
9		" 6 "
8		" 7 "
12		" 8 "
8		" 9 "
6		" 10 "
6		" 11 "
8		For 1 year.
22		From 1 to 2 years.
3		" 2 to 3 "
1		" 3 to 4 "
3		" 4 to 5 "
2		" 5 to 6 "
1		" 6 to 7 "
136		

Deaths.

Eighty-six deaths occurred in the three Asylums during the year, or a percentage of 5·68 in proportion to the entire number under treatment, and 25·50 in proportion to the admissions of the year.

The following summary will show that many of the patients who died were very long Asylum residents. Thus:—

2	were residents	Under 1 month.
13	"	" 2 "

2	were residents	Under 3 months.	
4	"	" 4 "	
1	"	" 5 "	
3	"	" 6 "	
1	"	" 7 "	
1	"	" 8 "	
1	"	" 9 "	
1	"	" 10 "	
6	"	" 11 "	
1	"	For one year.	
11	"	From 1 to 2 years.	
4	"	" 2 to 3 "	
11	"	" 3 to 4 "	
3	"	" 4 to 5 "	
2	"	" 5 to 6 "	
4	"	" 6 to 7 "	
3	"	" 7 to 8 "	
1	"	" 8 to 9 "	
5	"	" 9 to 10 "	
2	"	" 10 to 11 "	
2	"	" 11 to 12 "	
2	"	" 12 to 13 "	
3	"	" 14 to 15 "	
1	"	" 16 to 17 "	
1	"	" 18 to 19 "	
1	"	" 19 to 20 "	
2	"	" 21 to 22 "	
1	"	" 22 to 23 "	
1	"	" 23 to 24 "	
86			

Elopements.

During the present year six patients eloped from Asylums, viz., two from Toronto, and four from London. Notwithstanding the greatest care that may be taken to prevent escapes, it is not to be expected that the Asylum officials can guard entirely against them. Indeed, modern Asylum treatment has a tendency to increase the number of escapes, and, judged from that stand-point, it is perhaps desirable that elopements should occasionally take place, as giving evidence of increased personal liberty. Some patients are possessed of a desire to elope, that no amount of kind treatment can overcome; but even in cases of that nature, close confinement to the corridors of the Asylum would not be desirable. And when it is considered that upwards of 500 patients are constantly engaged in farm and out-door work, with only a wooden fence between them and liberty, it is rather wonderful that so few escapes occur.

Of the six patients who eloped, there were three warrant cases, who are, therefore, strictly speaking, escaped prisoners. I think in order to meet difficulties of this kind, and to facilitate recaptures, it is desirable that medical superintendents should be *ex-officio* magistrates, with provincial jurisdiction for that special purpose.

Asylum Accommodation.

The entire Asylum accommodation of the Province at the present time is as follows:—

Asylum for the Insane, Toronto	655 beds.
Asylum for the Insane, London (including Idiot branch)	580 "
Rockwood Asylum, Kingston (for Ontario patients)	345 "
	1,580

This summary includes the beds lately provided by the erection of the Idiot branch of the London Asylum.

The division of Asylum space and beds between men and women is about equal in all the Asylums, consequently there are 790 beds respectively for each sex.

It has already been stated that there were 1,489 patients under Asylum accommodation, of whom 716 were men, and 773 women. It would, therefore, appear that there were on the 30th September last, 74 vacant beds in the male wards, and 17 in the female wards of the three Asylums of the Province. Since that date awards have been made to all the vacant beds for females (with the exception of three in the superior ward in the Toronto Asylum), so that the Asylum accommodation of the Province for females is now exhausted, and the most pressing cases can only be provided for when discharges or deaths leave vacancies. Many of the vacant beds in the male wards have also been allotted, and before the close of the ensuing year, the preponderance in admissions over discharges and deaths will fill the beds in the male wards.

With these facts in view, it is very clear that the question of providing increased Asylum accommodation should receive immediate consideration from the Government and the Legislature, and that the method by which this can best be accomplished, is the most important and pressing feature in connection with the subject.

In pressing the claims of this unfortunate class upon the Legislature, it should be borne in mind that the liberal provision made for the insane by the last Parliament of the Province, through which, by the erection of the London Asylum, additions to the Toronto Asylum, and the arrangement with the Dominion Government for the occupation of Rockwood, over 600 additional beds were provided, was only the liquidation of a legacy of arrears left to the Province by the old Parliament of Canada.

Only within the past three years in the history of the Province could it be said that the supply of Asylum accommodation was at all proportionate to the demand for it, and the demand during that time has been, without doubt, abnormally increased, in consequence of the inadequate provision of the past. The experience of the past in this respect proves that the policy of withholding needed Asylum accommodation until the force of circumstances absolutely compels action to be taken, is unsound both morally and financially.

No stronger proof can be produced in support of this than the statement of Dr. Jarvis, than whom no higher authority in this speciality can be quoted, when he says that—"In a perfect state of things, where the best appliances, which the science and skill of the age have provided for healing, are offered to these lunatics, in as early a stage of their malady as they are to those who are attacked with fever or dysentery, probably eighty, and possibly ninety, per cent. would be restored, and only twenty, or perhaps ten, per cent. would be left among the constant insane population." Other authorities state that where every acute case of insanity is *at once* placed under skilled treatment, only *five* per cent. of those thus treated in the early state of mental disease remain as incurables. The Medical Superintendent of the Southern Ohio Lunatic Asylum, in his report for 1869, in an analysis of the result of treatment, in that Institution, of 1,781 cases of insanity, shows by the following figures that the chances of recovery diminish in exact proportion to the length of time the disease has existed. Thus, of 530 patients placed under treatment 1 month after the attack 363, or 68.49 per cent. recovered.

219	"	"	2	"	141	"	63·01	"	"
164	"	"	3	"	88	"	53·65	"	"
98	"	"	4	"	53	"	54·08	"	"
177	"	"	6	"	83	"	46·32	"	"
239	"	"	12	"	103	"	43·09	"	"
163	"	"	2 years	"	47	"	28·83	"	"
191	"	"	over 2 years		33	"	17·32	"	"

Dr. Workman, whose knowledge of the treatment of insane is the result of twenty years' active practical experience, has, time and again, shewn the necessity of early treatment, and has given figures to prove that the expectation of recovery is lessened proportionally by delay in placing under treatment.

These facts and figures conclusively prove that it is wise economy on the part of a Government to provide such an extent of Asylum space as will furnish sufficient beds for every acute case of insanity that presents itself. In this way alone will the number of chronic cases be brought to bear a proper proportion to the entire number of insane, and the undue accumula-

tion of that class in our Asylums be stopped and confined to a minimum. When this is done, and only then, urgent acute cases of insanity will receive an equitable allotment of the beds in our Asylums.

It is therefore very apparent that the question of providing increased Asylum accommodation must be considered concurrently with the question, what are we to do with our chronic insane? The fact that of the 1489 insane persons occupying beds in our Asylums on the 30th last Sept., no less than 1150 were hopelessly incurable is sufficient evidence that the problem of how we best can provide for this class is the most important that can arise in connection with the specialty of Asylum administration.

The humanity and benevolence of the age, it will not be denied, places it beyond a doubt that it is as much the duty of Government to provide for the care and comfort of its chronic insane as it is to furnish proper accommodation, with all the appliances that modern skill and science has devised, for the treatment of *acute* cases of insanity. Whether both these objects should be combined in one and the same establishment is a subject for consideration.

The system which, until within a recent period, obtained in the State of New York, in connection with the Utica Asylum, by which only what were thought to be curable cases were admitted, and patients found to be incurable were discharged from Asylum residence, was eminently favourable to the proper treatment of acute cases of insanity; but quite the reverse in the case of the chronic. The latter class, when discharged from the Asylum were returned to the County from which they came and consigned to the wards of a local poor-house, and to the tender mercies of comparatively irresponsible officials. The abuses and cruelties practised in these local establishment were so great that public opinion compelled the Legislature of the State of New York to provide separate Goverment Asylums for the custody of her chronic insane.

That it is necessary or even desirable to have separate Institutions for each class has not yet been fully decided by the members of the specialty. My own observation would lead me to conclude that there are commendable features in both the separate and mixed systems, but that the circumstances of a country or state must determine which shall be adopted.

It is generally conceded that no Asylum for the Insane should be of greater capacity than is required to accommodate 600 patients, although, both in Great Britain and the United States, this recommendation of the English and American Associations is not carried out. It will, however, be very obvious to any one conversant with the working of such Institutions that when the population of an establishment exceeds 700, the division of responsibility and duty, caused by the great volume of work to be performed, does not generally conduce to efficient management.

In view of the fact that a large quantity of land is attached to the Asylums at Toronto and London, and that their boundaries are not confined, I do not think that an increase of the insane population to 700 in each of these Institutions would be fraught with danger either to their medical or domestic administration.

It must be kept in mind that the salaries and wages at the Asylums named constitute over twenty-five per cent. of their entire expenditures and that the erection of a new and independent Institution exclusively for chronics would involve the appointment and expense of a duplicate staff of officers, while additions to the present establishments to provide increased space for that class would only require the appointment of a few additional attendants.

Among the chronic insane in all Asylums are to be found quiet docile persons, having no dangerous or destructive propensities so long as they are under Asylum discipline and supervision. At London Asylum, the number of this class is greater than at Toronto or Kingston, as the largest proportion of its inmates were received from the branch Asylums at Malden and Orillia, and were specially selected from the Toronto Asylum, and transferred to these branches as quiet harmless patients.

At least, one hundred of these patients could with perfect safety be removed from the Asylum and placed in cottages erected in close proximity to the main edifices upon the grounds. In this way one hundred vacant beds would be placed at the disposal of the medical superintendent for the curable insane. I am aware that the cottage system has been condemned by the Association of medical superintendents, but as the plan proposed is simply an isolated addition to an establishment already in existence, placed under the same admi-

nistration, and subject to the same control and supervision, it therefore possesses few if any of the objections urged against the system condemned by the Association.

On the other hand, the plan proposed possesses many advantages which cannot be had in a large institution, and which may be briefly summed up as follows :—

1st. The provision of additional beds in the main Asylum for the treatment of curable cases, by the removal of the quiet chronic patients to structures costing less than one-half the amount required to give the same accommodation in the main building.

2nd. The additional privileges that can be given to such patients by surrounding them with *home* comforts which cannot be extended to them in the Asylum wards.

3rd. Greater convenience for the working patients, who comprise not an inconsiderable portion of the chronic insane, to be placed at work on the farm, gardens, grounds, and out-buildings of the Asylum.

I have transmitted to the Honourable the Commissioner of Public Works, a sketch plan of two groups of cottages, four in each group, placed on the quadrangular principle, and capable of giving accommodation to 96 patients of the class referred to. Fully believing that the proposed plan will provide for the requirements of the Western portion of the Province for many years to come, I would respectfully recommend that an appropriation be asked from the Legislature to enable the scheme to be carried into effect. Should the system prove successful, similar structures can be erected to meet the necessities of the Central and Eastern portions of the Province.

Idiot Asylum.

This establishment, although entirely isolated from the London Asylum, forms a branch of it, and is under the same management and control. The building, which is erected on the Asylum grounds, and is capable of accommodating 38 inmates, was opened for the reception of idiots on the 1st September last. On the 30th of the same month 28 idiots, viz., 17 males and 11 females had been admitted, and now every bed is taken up.

Although, in the first instance, it was intended that the structure, which comprises a front building and projection from it to the rear, should be occupied exclusively by males, so many urgent cases of idiocy among females were reported, many of whom were in gaol, that it was thought desirable to divide the limited accommodation thus afforded between both sexes.

Forms of admission papers, queries, and certificates, were prepared and transmitted to the Government for approval. In view of the great necessity that existed for obtaining reliable information respecting the idiots for whom application was made, who when once admitted would become inmates of the Asylum for life: the queries were framed not only to accomplish that object, but also for the purpose of collecting statistical information respecting the class of defectives for whom the Asylum was established. In this way only, with the very limited accommodation provided, could a judicious selection of the most urgent cases be made from among the many hundred idiots in the Province. The nearest relation of the idiot was therefore required to give the necessary information, under his or her signature, and if the idiot was in gaol the prison surgeon was required to sign the answers to the queries also.

In connection with the form of certificate, the question suggested itself whether the statutory wording of 32 & 33 Vic., Stat. of Can., cap. 29. sec. 105, would be sufficient authority for confining an *idiot* in an asylum. On the question being referred to the Attorney-General of the Province, he decided that the term *insane* covered every phase of mental derangement including idiocy, and if, after examination, the person was found to be "insane," a certificate to that effect was sufficient authority for the custodial restraint of an idiot. In cases of ordinary admission to the Idiot Asylum, where certificates are signed by three medical practitioners, under 34 vic., cap. 18, sec. 6, the words "found him to be a lunatic" have to be used. But as lunacy and idiocy are separate and distinct phases of insanity, such a certificate in relation to idiots would obviously be insufficient. The wording of the certificate, in order to obtain admission to the Idiot Asylum, was therefore ordered by the Attorney-General to be as follows :—"That after due enquiry into all necessary facts relating to his case, we hereby certify that the said person is insane, and we further certify that the said person is a proper subject for an Idiot Asylum."

Having settled the method of admission as above indicated, the following circular was issued from the Provincial Secretary's Department addressed to Judges, Sheriffs, and Gaol Surgeons.

PROVINCIAL SECRETARY'S OFFICE.
TORONTO, July 1872.

"SIR.—I have the honour to inform you that the Asylum for Idiots, at London, will be ready for the reception of Idiots on 1st day of September next.

"With reference to the mode of admission, I have the honour to call your attention to the following extract from the last Annual Report of the Inspector of Asylums and Prisons, having regard to the Asylum in question.

"That the design of establishing this Institution may be fully defined and recognized, I may state that the By-laws respecting the admission of patients to the several Asylums for the Insane provide that no Idiots shall be admitted to these Institutions, and the Statute, upon which these by-laws are based, provides that before admission to an Asylum is awarded, the person must, on examination, *be found to be a Lunatic.* Without entering upon a psychological disquisition as to what constitutes *idiocy* in contradistinction to *lunacy*, I will simply state in broad terms, that the Asylums for the Insane were primarily established as hospitals for the treatment, with a view to the cure or improvement of persons afflicted with mental disease. The end, thus defined, for which Asylums were founded, indicates that persons sent to them must be susceptible of cure or improvement; and although this condition is frequently violated in the admission of patients who often turn out to be incurable chronics, still, until actual residence reveals their mental condition, admission cannot well be refused, unless the probabilities in that direction are very strong, and the indications very apparent.

"On the other hand, the *mental* condition of a congenital Idiot cannot be improved, although if subjected to a course of training in early life his habits and mode of living may be bettered in many respects.

"I am of opinion that the class of Idiots first entitled to relief by admission to this Institution, are those who have been committed to the several gaols of the Province as persons dangerous to be at large, and who, under the By-laws, cannot be admitted to Asylums for the Insane. As their discharge from gaol would, in many instances, be attended with danger to life or property, it is clearly the duty of the Province to provide for them in the same manner as it has done for the insane.

"Next to that class, the most urgent cases in private families should be awarded admission; dangerous proclivities or vicious habits always being the test of urgency."

It must be almost superfluous to urge upon Sheriffs and others concerned in the removal of Idiots to the Asylum, the necessity that exists, caused by the limited accommodation at the disposal of the Government for the reception of this class of unfortunates, for the exercise by them of the utmost care and discretion in the examination of the Idiot, and in the preparation of the necessary papers; otherwise the danger exists that the establishment be filled by quiet, harmless Idiots and Imbeciles, to the exclusion of those for whom it was intended.

The recommendation of the Inspector as to the class of Idiots first entitled to admission has been approved of by the Government, and the compliance of Sheriffs therewith is accordingly required.

Blank forms of queries and admission papers to be filled up and transmitted to this Department, with application for admission, have been furnished to the Sheriffs."

ADDITIONAL IDIOT ASYLUM ACCOMMODATION REQUIRED.

Although the closest scrutiny was made into all applications for admission into the Idiot Asylum, and many applications were rejected, still it would appear that the demand for such accommodation was so great in the Province that its beds were all filled within three months after it was opened. The necessity that existed for the establishment of such an Asylum was, therefore, clearly shewn, and the many pressing applications now on fyle asking for the admission of most urgent cases will necessitate the completion of the building to the capacity originally designed, viz., for one hundred inmates. To accomplish this I would re-

commend that the rear wing be extended to provide sixteen additional separate rooms for males: and that a building similar to the present front structure be attached to the rear, affording space for forty inmates, with rooms for the attendants and domestic purposes.

In the manner proposed, provision would be made altogether for 94 idiots, which are as many as should be placed in a building forming a branch of an Insane Asylum.

Training Establishment for Idiotic and Imbecile Children.

The class of idiots for whom it is most desirable that something should be done in this Province are the youths between the ages of 5 and 14. These idiotic and imbecile children, of whom there cannot be less than from 200 to 300 in Ontario, are now growing up without any training or instruction, and are constantly contracting vicious habits, and in many cases dangerous propensities. In every family where they are, their care is attended with the greatest anxiety, but among the poorer classes it is to be feared they are often utterly neglected. So long as this state of things is allowed to exist, asylums for adult idiots must continue to be enlarged, and their number increased in order to provide quarters for this unfortunate class. Under these circumstances it becomes a question for the serious consideration of the Government and the Legislature, if a well devised effort should not be made to reduce the number of adult idiots who require to be supported by the public and confined in asylums, owing to dangerous habits or indecent behaviour. This can only be accomplished by the establishment of a training school for idiotic and imbecile children. The reports received from such institutions now in operation in Great Britain, and other countries in Europe, as well as in the United States, are most satisfactory. Over fifty per cent. of the children trained and instructed in them are fitted to be placed in families, where they become useful and earn their own living, instead of becoming, as they otherwise would, vicious and degraded, and a constant charge upon the public.

When we consider that every adult idiot placed in an Asylum at the age of 22, which is the average age of the present residents of the Idiot Branch of the London Asylum, will have to be supported, on an average, for 20 years in an Asylum, at a cost of $140 a year, even public economy would suggest the adoption of the only remedy that can be provided—viz., the establishment of a training school.

At the present time, about a fourth of the inmates of the Idiot Asylum are of a teachable age; but if they remain much longer in the same wards with grown-up idiots, bad habits will be formed, and instruction rendered impossible.

The training school should be wholly for educational purposes, and as soon as an idiot is found to be incapable of receiving instruction or benefit, he should be removed to the Asylum.

Fully believing that the proposed establishment will supply a want that is felt by many a family in the Province to an extent that is but little realized, and that, through its means, the necessity for adding to Asylums for adult idiots will be much decreased, I have presumed to bring the matter under the notice of the Government and the Legislature.

ASYLUM EXPENDITURES.

I had the honour to address the following communication to the Honourable the Treasurer of the Province, relative to the system which then obtained of checking and auditing the accounts of Asylums and other public institutions, believing that a change was necessary:—

"Office, Inspector, Asylums, Prisons, &c.,
9th February, 1872.

"Sir—I have the honour to bring under your consideration the desirability of adopting a more efficient method of auditing the accounts of the public institutions placed under my supervision and inspection.

"At present, the audit is made at my quarterly inspections of these establishments, *after the accounts have been passed and paid by the Treasury Department*, which renders it a mere examination of the books, and a comparison of the entries in the same with the vouchers and accounts produced, in which errors or irregularities seldom occur. Such an

audit, it will at once be apparent, affords little or no check over the quantity of stores and supplies consumed, or the prices paid for them, and not only very much restricts the *surveillance* that should be had over expenditure, but inasmuch as the examination is made subsequent to payment, the entire object of the audit is defeated.

It is also desirable that the expenditures for the various branches of the service should not exceed the amount appropriated under the headings of the detailed estimates upon which the appropriation is based, and, if they do, enquiry should be made into the cause of excess. It is very clear that an audit of the kind thus indicated can only be made by an official conversant with the every day working and general management of the institutions, and one who has knowledge of the contracts entered into, and the prices that should be paid for supplies, and the other services of the establishment. I would, therefore, most respectfully recommend :

1st. That the monthly accounts and statements should be examined and passed by the Inspector of Asylums, &c. before they are finally approved of and paid by the Treasury Department.

2nd. That a book should be opened by that official in which the details of the monthly expenditures shall be entered and analyzed under the several headings.

3rd. That such official shall certify to the general correctness of such statements and accounts.

To accomplish this it will be necessary to have the assistance of one of the Treasury Department Clerks for a few days every month, all of which is respectfully submitted."

In accordance with the recommendations contained in this report, an Order in Council was approved by His Excellency the Lieutenant-Governor, on the 12th of February, providing "that for the future the accounts of the Public Institutions shall be presented monthly to the Inspector of Asylums who shall audit the same with the assistance of a clerk from the office of the Provincial Treasurer."

The Asylum expenditures for the official year ending 30th September, detailed statements of which are herewith annexed, were as follows :—

Asylum for the Insane, Toronto	$ 81,281 21
" " London	62,938 21
Rockwood Asylum, Kingston *	43,500 00
	$187,719 42

These figures shew that the entire yearly cost of maintaining each patient in the various Asylums, which includes clothing, bedding, salaries and wages, repairs and *every charge* connected with the maintenance of Asylums was as follows :—

Toronto	Asylum,	$2·53	per	week	or	$131·75	per	year.
London	"	$2.48	"	"	or	$129.24	"	"
Rockwood	"	$2·75	"	"	or	$143·00	"	"

A comparison of these rates with those of similar Institutions in the United States is most favourable to this Province; thus the cost at :

Worcester	Asylum,	Massachussetts	was	$4·32	per	week or $224·64	per year.
Taunton	"	"		3·59	"	186·68	"
Northampton	"	"		3·68	"	191·36	"
Central	"	Ohio		4·13	"	214·76	"
Northern	"	"		5·60	"	291·20	"
Southern	"	"		5·00	"	260·00	"
Jacksonville	"	"		4·00	"	208·00	"

* Only an estimate of the amount. Statement for the year not yet received.

REVENUE.

The Receipts from paying patients and other sources of Asylum Revenue continues to increase in much greater proportion than the increase in Asylum population. The total amount received this year was $19,785.73, which was obtained from the following sources:

Paying Patients	$19,255 80
Articles Sold	421 18
Discount off bills	108 75
	$19,785 73

Deducting the revenue thus received from the gross expenditures and we find that the actual cost to the Province, for the official year ending 30th Sept. of maintaining its insane. was $167,933 69.

Various suggestions and recommendations for new buildings, and alterations and repairs to the present buildings will be found in the Separate Reports upon each Institution.

SEPARATE REPORTS

UPON THE

State and Condition of Asylums

FOR THE INSANE

AND THEIR

OPERATIONS,

FOR THE YEAR ENDING 30TH SEPTEMBER, 1872.

ASYLUM FOR THE INSANE, TORONTO.

Three official inspections were made of this Asylum during the year in the months of March, July and October: besides many visits to it on general business connected with the Institution, which also partook of a semi-inspectorial character. The statutory inspection of March occupied two days, the 27th and 29th, during which time I went through and examined every department of the Asylum, and saw every patient in the house. There were then 617 patients in residence, viz:—309 men and 308 women. With the exception of twelve beds in the superior paying patient ward and five in the ordinary wards, (three of which last had been awarded to patients that had not then arrived) the accommodation for females was exhausted and a considerable number of applications were on fyle waiting vacancies. At my inspection in October—which extended over the 28th and 29th—the number of patients had increased to 623, viz: 312 men and 311 women. On that occasion every patient was personally examined and full information was obtained from the medical superintendent respecting the period of residence, and the probable results of the treatment of each patient. From the information thus obtained it would appear that of the entire number of patients then in the Asylum, 97 were thought by the medical superintendent to be curable, although the recovery of some of this number was considered *very* doubtful, while no less than 526 were pronounced to be beyond hope of recovery.

The exceptions to the quiet and orderly demeanour of the patients were very few, and were chiefly confined to the female refractory ward, and some of the noisy demonstrations there were, doubtless, in consequence of my visit. The same thing, in a lesser degree, was observable in one of the male wards. With these exceptions the patients were remarkably free from excitement.

The general appearance of the patients, both in respect to clothing and personal cleanliness, was most satisfactory. The variety introduced, in colour and cloth, in the men's clothing, in place of the unpleasant uniformity that formerly existed, has much improved the appearance of the male patients. The female patients in this Asylum, with very few exceptions, are always neat and tidily dressed. A few men, who were destructive in their habits, had on the canvass dress, without having the arms restrained, and, on both sides of the house, only four patients had their hands muffled.

With the exception of shoes, all the clothing is made at the Asylum by the patients, with the assistance of a tailor on the male side, and one seamstress on the female side of the Asylum. I hope shortly to be able to report the manufacture of the shoes also.

I have, as usual, a good report to make of the state and condition of the Asylum. Every corridor, dormitory, and room in the Establishment was examined, and found in the best possible order, and in the highest state of cleanliness throughout; and the general administration of its affairs is most efficient, and highly creditable to Dr. Workman's management.

The short crop of straw received from the farm, and the consequent increase in the cost of providing a sufficient quantity for the beds, which this year amounted to $780 48, suggests the advisability of increasing the number of hair-mattresses throughout the Asylum. I would recommend that an appropriation be asked to enable one hundred good, curled, hair-mattresses to be purchased, as well as for additional furniture and furnishings, according to requisition transmitted to the Commisioner of Public Works.

The general health of the Asylum has been good during the year, with the exception of a few cases of erysipelas in the beginning of the year. Precautionary measures were taken by the Medical Superintendent to guard against the spread of small-pox, should it, unfortunately, be introduced into the Asylum. The Medical Superintendent was assured that any efforts of his to keep the household beyond the reach of contagion would be promptly seconded.

The total number of patients admitted to the Asylum during the year was 148, viz.—98 men and 50 women. Of this number, 95 were admitted by the Medical Superintendent under the provisions of 34 Vic. cap 18, section 7, and the remaining 53 by the warrant of the Lieutenant Governor. The number of deaths that have taken place during the past year a little exceeds the previous twelve months, viz.—27 men and 11 women.

The presence of a few congenital idiots in the wards of the Asylum, most of whom were transferred from gaols, is prejudical to an institution of this kind. I would, therefore, recommend their transfer to the Idiot Branch of the London Asylum, as soon as sufficient space is provided at that Institution to admit of this.

I visited the patients' dining-rooms frequently during my visits. The fare in every case was good and abundant, and at most of the tables very fair order and decorum prevailed. A better classification of the patients, however, if it can be obtained, would be desirable. The total cost of maintaining the Asylum for the year was $81,281 21. This amount, however, includes the fuel supply of two years, in consequence of the late delivery of the coal by the contractors last season. As the average daily number of patients in the Asylum was 617, these figures shew the yearly cost of each patient to be $131 75.

The receipts from the payment of patients board has increased from $3,477 78 in 1866, with 472 patients in the Asylum to $16,046.28 for the present year with 617 patients. The total receipts from all sources were as follows:—

Paying Patients	$16,046 18
Sundry Articles Sold	148 44
Discounts	5 57
Rebate on Duty on Tea re-bonded	103 18
	$16,303 37

If we deduct this amount from the entire cost of the Asylum, we find that the actual cost to the Province of maintaining the Asylum for the year was $64,977.44.

New Buildings, Alterations, and Repairs.

The laundry of this Asylum possesses few or none of the modern appliances for washing, mangling, &c. The building itself is very badly arranged, and the space is entirely too limited for an Asylum of this size. In consequence of these defects this important branch of the Asylum service is performed under great difficulties, and requires a greater number of paid servants than a properly arranged laundry would require. Owing to the position of the inner walls, which are of brick, and to the confined space, it would be impossible to make such alterations as are necessary to render it a convenient laundry. I would therefore recommend that a new laundry be erected, and that the present building be given up to the Bursar for Asylum stores. The rooms used for the last named purpose are scattered over the basement

corridors of the Asylum, which causes considerable unnecessary labour and waste of time in the daily distribution of the stores. By this means also at least twenty-five additional beds could be made up in the lower corridor for the working patients, which, calculated at the cost of Toronto Asylum accommodation per patient would more than pay for the new laundry.

A sum was voted by the Legislature during last Parliament for the erection of new coal and wood sheds, but in consequence of the difficulties and delay of fixing upon a convenient site the appropriation was allowed to lapse, and the buildings were not erected. Now, however, a site has been determined upon, and it is desirable that the work should be proceeded with at once, especially as the existence of the present inflammable sheds is a constant source of danger, and as the space occupied by them in the quadrangle is greatly needed for ornamentation.

A farther appropriation is also required to complete the stables and barns on the new farm, in accordance with the plans prepared in the Public Works Department, the amount voted last year not having been found sufficient. It is also desirable that another cottage should be erected on the land for the accommodation of the farm labourers.

I would also recommmend that the original design of Mr. Howard, the Asylum Architect, for the front entrance to the Asylum, be carried out, by the erection of cut stone steps and columns, as shown in the plan. Having to pass *through the cellar* in order to get to the *reception room* of one of the most important public Institutions in the Province is, as I remarked in a previous report, not calculated to create a very favourable impression upon visitors or strangers, besides being very inconvenient.

LONDON ASYLUM.

Four inspections of this Asylum were made during the year. My visit in January occupied two days, the 10th and the 11th. There were then 487 patients in residence, of whom 221 were men and 266 women. This number of females in residence left only six vacancies on the female side of the house, and these had been all awarded to patients who were looked for daily. The patients were generally clean and neat in their personal appearance and were comfortably clothed; nine patients, who were destructive in their habits, had on the canvas clothing. With the exception of a few very noisy and unruly patients in the female refractory ward all the rest were very quiet and orderly.

In the case of two female patients committed under the warrant of the Lieutenant-Governor, although it could not be certified that they had been entirely restored to a sound mind, they had so far recovered that their mental condition would have been much improved by removal from the Asylum; and a qualified certificate having been received from the medical superintendent to that effect, their discharge was recommended and at once took place. Only four patients were confined to bed during the daytime,—two on the male and two on the female side of the Asylum. Some of the patients, chiefly in the female corridors, shewed a great disposition to lie down on the floor, although comfortable forms and seats are provided in all the wards. This habit would doubtless be overcome by watchfulness on the part of the attendants.

The filthy condition in which patients are sometimes sent to Asylums from county gaols was illustrated in the case of a patient who had just been received. The matter was brought to the notice of the Government, in order that the neglect should be brought to the notice of the local authorities.

At my March inspection I made a most minute examination of every part of the Asylum with a view to placing before the Commissioner of Public Works a detailed statement of the structural defects of this institution, which I did in a report dated 22nd March, 1872. Many of these defects, which had frequently been reported upon before had become so obnoxious as to cause serious difficulty in the management of the affairs of the Asylum, as well as to endanger the health of the patients, to some of which I will now briefly refer.

In a report made upon the condition of this Asylum on the 28th January 1871, the following words were used respecting the ventilation of the building: "*If the absence of offensive smells and odours* can be accepted as a proof of efficiency in the system of ventila-

tion, the plan adopted in the London Asylum must be pronounced as perfect as it is possible to have this important part of Asylum construction." This remark was made on an examination of the building after it had been occupied only *two months*. I regret that *two years'* occupation compels me now to say that *if the presence of the most offensive smells and odours can be taken as an evidence of defective ventilation, then the system adopted in the London Asylum is the worst that could have been devised.* Without expressing an opinion respecting the principle introduced in the ventilation of this Asylum, I only desire to say that after a careful observation, extending over eighteen months, and after many visits to the dormitories and wards during the day and the night, I can only come to the conclusion that the means now existing of ventilating the building are utterly defective and inadequate, and that the most urgent necessity exists for the introduction of a proper system. Should an epidemic appear in the Asylum at the present time the consequences could not be but disastrous.

The ordinarily vitiated atmosphere of the Institution is frequently rendered still worse by a short supply of water for sewerage and lavatory purposes. In the months of August and September this is attributable to the insufficient amount furnished by the wells; rendered still more precarious by the constant breaking of the pumps which supply the tanks. This difficulty will continue until the sources of water supply are increased, and proper pumps are provided. The drains from the west wing of the Asylum and the yards leading into the main sewer are continually choking up owing to the small diameter of the tile piping, and in some instances to the want of sufficient fall. These are the more serious defects, but to them should be added many others. Owing to the bad plastering throughout the Asylum, over a sixth of the entire ceiling surface has fallen down. The wood-work and flooring are of the worst kind, both in respect to material and workmanship, and the painting generally throughout the Asylum is very inferior. The windows are so badly fitted that not over a half of them can be opened without sending for the carpenter.

Much of the bad workmanship and the inferior quality of material above referred to did not appear until the Asylum had been occupied for a considerable time, but now that the full extent of the deficiencies and defects are known, it is most desirable that they should be remedied at once.

At my visit to the Asylum in October, the Branch for idiots had been opened and in operation for over a month, consequently the number of patients in residence had much increased, and was as follows :—

Number of	males in Main Asylum	230
"	females " "	264
"	males in Idiot Branch	19
"	females " "	12
	Total Number in residence	525

In addition to this number two patients were absent on probation, whose names still remained on the Asylum roll. I personally saw and examined every patient in the Asylum at this visit. They were all sufficiently clothed, and with few exceptions were neat and clean in their appearance. Not a single case of mechanical restraint was in existence in the Asylum, one patient—an epileptic—who was said to be sometimes very violent was confined in his room, in consequence of a propensity to strike patients, and damage property. The use of the hand-muffs in a case of this kind might be resorted to without doing violence to the feelings of the most advanced advocate of non-restraint, and in my opinion would be preferable to long confinement in a small badly ventilated room.

The inmates of the Idiot Branch were very clean and tidy in their persons and had all the comforts that could be extended to them under their circumstances. The great necessity that exists for establishing a training school for idiotic and imbecile children, was apparent on entering the wards, as no less than eight of the inmates were of the age and class who would be greatly improved by instruction and training in such an establishment. Indiscriminately mixed with adult idiots as they were then, they will soon contract all the habits and vicious propensities of the adults. Until such an Institution is

provided the medical superintendent was instructed to effect as good a classification and separation as the limited space will admit of.

At all my inspections of the Asylum, the female corridors were found in the most admirable order, and exceedingly clean throughout.

The same thing may be said of the male side of the Asylum, although the presence of workmen in the corridors altering and repairing bad workmanship is a constant source of confusion and disorder.

The beds throughout the entire Asylum, were scrupulously clean and neatly and tidily kept, and the bedding comfortable and sufficient. The kitchen and the other domestic departments of the Asylum are always in excellent order.

The regularity and good discipline that prevails in the administration of the affairs of this Institution are most creditable to the medical superintendent, and his staff of officers.

The operations of the Asylum for the year, in respect to patients were as follows :—

	Men.	Women.	Total.
Remaining in the Asylum on the 1st October, 1871,	207	250	457
Admitted during the year.			
On the Lieutenant-Governor's warrant	45	29	74
By Medical Certificates	34	35	69
Total number under treatment	286	314	600

Disposed of as follows :—

	Men.	Women.	Total.			
Discharged cured	20	17	37			
" Improved	2	5	7			
" Unimproved	1	0	1			
Died	11	16	27			
Eloped	3	1	4			
	—	—	—	37	39	76
Total number of patients remaining in Asylum on the 30th September, 1872				249	275	524

The books of the Asylum were examined and found to be correctly and neatly kept. Mr. Mathison, since his appointment to the position of Bursar, has discharged his duties in the most efficient manner.

The total expenditures for the year amount to $62,938.21. This sum, however, includes several accounts, which should have been paid out of last year's appropriation amounting to over $3,000.

The average daily number of patients in the Asylum was 486. It would thus appear that the yearly cost of each patient was $129 24.

The sum of $2,749·08 was received from the board of paying patients, and other sources as follows :—

Received from paying patients	$2,476 36
Articles sold	272 74
	$2,749 10

The receipts from paying patients, although still very much below what they should be, were more than double the amount obtained the previous year. Deducting the revenue from the gross expenditure, we find that the actual cost to the Province of maintaining the Asylum for the year ending 30th September, was $60,189·11.

The farm accounts were examined and exhibit, considering the unfavourable season, a very fair result for the years operations :—

The value of farm products consumed in the Asylum was	$6,850
And of the garden	1,500
	$8,350
The cost of labour, seed, &c., was	5,016
Shewing a balance to the credit of farm operations of	$3,334

As it is desirable to obtain accurate information respecting farm operations, the Bursar was instructed to open a farm account, charging all expenses, and crediting all receipts in the same manner as in a personal account.

I would most respectfully recommend for the consideration of the Honourable the Commissioner of Public Works that an appropriation be asked from the Legislature for the following new buildings, additions, alterations and repairs :—

1st. Eight cottages, in groups of four each, according to sketch plan furnished by Dr. Landor, for 96 chronic insane, to be removed from the wards of the main Asylum, with the requisite out-houses, fencing, ornamenting, &c. Furniture and furnishings for the same.

2nd. Wing additions to the Idiot Asylum, to give additional space for sixty idiots, with increased kitchen and store-room space, and a dwelling house for an assistant physician. Furniture and furnishing for the same.

3rd: Six cottages for the employees of the Asylum, with out-houses, fencing, wells, cisterns, &c., &c.

4th. Extension to the bakery, 35 feet long by 22 feet wide, with an additional fire brick oven.

5th. A mortuary.

6th. Improvement of the Asylum ventilation and drainage ; increasing the water supply, and completing the fire protection arrangements, including a house for the engine and hose.

7th. Alterations to some of the Asylum windows, plastering the ceilings, relaying floors, and painting the Asylum throughout.

8th. Planting, gravelling, levelling, and general ornamentation, and draining the grounds in rear of the Asylum.

ROCKWOOD ASYLUM, KINGSTON.

I visited this Asylum on the 17th of August for the purpose of seeing, and personally examining the patients sent to the Asylum by the Government of Ontario, under the arrangement made with the Dominion Government. At my visit the total number of patients in the Asylum was 376, of whom 340 were Ontario patients ; thirty-five were insane convicts, who were received from the Kingston penitentiary, supported by the Dominion Government, and one was admitted under the provisions of 34 Vic., cap. 18, sec. 7., without the consent of the Ontario Government.

The 340 patients supported by Ontario comprised 170 of each sex. Three hundred and twenty five of the number were transferred by warrant from the various gaols of the Province ; one was received from the Penetanguishene Reformatory, and fifteen had been convicts sentenced from various courts of the Province of Ontario to confinement in the Kingston Penitentiary, and who, having become insane during custody there, were transferred to this Asylum. The term of sentence of these insane prisoners having expired, they being still of unsound mind, are looked upon by the Dominion Government, from the fact that they were sentenced to the penitentiary from this Province, as Ontario patients, and charged accordingly. This decision of the Dominion Government certainly appears to be fair, but as there are seven patients in the Asylum received under similar circumstances from Quebec, having been sentenced from the courts of that Province, it is but right that the decision should equally apply to these cases, which, I am informed is not the case.

I saw every one of the Ontario patients, and conversed with many of them. Both

their general appearance and bodily state gave evidence that they were in possession of all the comforts that could be extended to them under the circumstances.

They were all well and comfortably clothed, and their beds were scrupulously clean and very comfortable. The dietaries of the Asylum were ample, and the food was of the best and most wholesome kind. No better proof could be furnished of the devoted and humane attention of Dr. Dickson, the medical superintendent, to his patients, than the manner in which he was welcomed by them in passing through the wards of the Asylum with me. The cleanliness, order and good discipline that prevails throughout the Institution furnishes abundant evidence of its efficient management.

The movements and operations of the Asylum, in respect of Ontario patients, for the official year ending 30th September, are shewn in the following summary :—

	Men.	Women.	Total.
Number of Ontario patients in the Asylum on 1st October, 1871	179	133	312
Admissions during the year	9	51	60
Total number under treatment	188	184	372

Disposal of the same :—

	Men.	Women.	Total.
Discharged cured	6	7	13
Died	10	11	21
	16	18	34
Ontario patients remaining in the Asylum on the 30th September, 1872	172	166	338

The following table shews the former places of abode of these 338 patients :—

County Brant	7
" Bruce	4
" Carleton	23
" Elgin	2
" Essex	3
" Frontenac	35
" Grey	5
" Haldimand	4
" Halton	1
" Hastings	16
" Huron	2
" Kent	2
" Lambton	6
" Leeds and Grenville	7
" Lanark	12
" Lennox and Addington	8
" Lincoln	6
" Middlesex	7
" Norfolk	3
" Northumberland and Durham	12
" Ontario	14
Carried forward	179
Brought forward	179
County Oxford	7
" Peel	4
" Perth	5
" Peterborough	5
" Prescott and Russell	2
" Prince Edward	5
" Renfrew	7
" Simcoe	4
" Stormont, Dundas & Glengarry	24
" Victoria	6
" Waterloo	7
" Welland	5
" Wellington	3
" Wentworth	7
" York	38
Kingston Penitentiary	15
Toronto Asylum	10
Malden Asylum	4
Penetanguishene Reformatory	1
	338

The follow table shews the Nativity, Religion and Social Condition of Ontario patients, in Rockwood Asylum, 30th September, 1872 —

Nativity.

	Total.
Americans, United States	1
American Indians	1
Canadians	129
English	35
Germans	22
Irish	114
Scotch	30
Not returned	6
	338

Religion.

	Total.
Baptists	14
Episcopalians	76
Lutherans	17
Methodists	62
Plymouth Brethren	1
Presbyterians	52
Roman Catholics	105
Not returned	11
	338

Social Condition.

Married	151
Single	182
Not reported	5
	338

Since Confederation five hundred and thirty-four patients have been under treatment in Rockwood Asylum, supported at the expense of the Province of Ontario.

The following summary shews the entire operations of the Asylum in this respect :—

	Men.	Women.	Total.
Number of patients remaining in the Asylum chargeable to Ontario on the 1st July, 1867	89	29	118
Admissions since that date to the 30th Sept., 1872	211	205	416
Total number admitted	300	234	534

These patients were disposed of as follows :—

	Men.	Women.	Total.
Died	70	40	110
Discharged	56	27	83
Eloped	2	0	2
Transferred	0	1	1
	128	68	196
Number remaining in the Asylum on the 30th September, 1872	172	166	338

Of the one hundred and eighteen patients that were in the Asylum on the 1st July, 1867, chargeable to Ontario, seventy-eight still remain in residence, twenty-eight died,

and only twelve were discharged cured. The fact that after a period of over five years, only twelve out of one hundred and eighteen patients have been restored to a sound mind, shows clearly that the great proportion of the number were, when admitted, incurable lunatics.

The following table shews the former place of abode of the 534 patients supported by Ontario :—

Algoma	2	Brought forward	276
Brant	10	Ontario	22
Bruce	4	Oxford	10
Carleton	43	Peel	8
Elgin	3	Perth	11
Essex	3	Peterboro'	9
Frontenac	58	Prescott and Russell	6
Grey	9	Prince Edward	8
Haldimand	6	Renfrew	11
Halton	1	Simcoe	10
Hastings	26	Stormont, Dundas, and Glengarry	33
Huron	9	Victoria	10
Kent	2	Waterloo	11
Lambton	7	Welland	7
Lanark	18	Wellington	5
Leeds and Grenville	12	Wentworth	12
Lennox and Addington	12	York	46
Lincoln	12	Malden Asylum	5
Middlesex	10	Provincial Lunatic Asylum	15
Norfolk	9	Provincial Penitentiary	18
Northumberland and Durham	20	Penetanguishene Reformatory	1
Carried forward	276		534

In closing my remarks upon this Asylum I would again presume to repeat the recommendations contained in my report of last year, respecting the advisability of the Province purchasing Rockwood Asylum from the Dominion Government.

As the establishment is at present entirely under the control of the Dominion Government, the arrangement that now exists for sending Ontario patients to it is practically the "farming system" of maintaining lunatics, and *that too without the supervision and direction of the Government*, which pays for such maintenance, and which alone is responsible for the care and treatment of the patients. It is desirable, therefore, that this Asylum should come under the control of the Government of Ontario for the following reasons :—

1st. The requirements of the eastern section of the Province render it necessary that there should be an Asylum for the reception of insane under the ordinary process ; at present no admissions are awarded to Rockwood, except under the warrant of the Lieutenant-Governor, and then the lunatic must first be committed to the Common Gaol.

2nd. The connection that exists between the Penitentiary and this Asylum, both in the reception of criminal lunatics from that penal institution, and in the same authority having control of both is prejudicial to the well-being of an Asylum for the insane ; and the fact that it is known as a "Criminal Asylum," is not calculated to sooth the feelings of the friends of the unfortunate inmates.

3rd. The difficulty of looking after the property and estate of insane persons, as well as the desirability of having uniformity of administration in every Asylum in the Province.

4th. The fact that, out of 376 lunatics in Rockwood Asylum on the 30th September, 340 are supported and maintained at the expense of the Province of Ontario.

5th. The present system of paying a certain amount per head for the maintenance of insane, is open to serious objection, as encouraging what is known as the "farming system," which is liable to abuses of every description.

ASYLUM EXPENDITURE.

STATEMENT of the Expenditure of the Asylum for the Insane, Toronto, nding 30th September, 1872.

Medical Department :

Medicines	277 37	
Medical comforts and appliances	51 14	
Beer, spirits, and wine	2,016 65	
		2,345 16

Household Expenses (Food) :

Butcher's meat	9,829 66	
Fowls	324 15	
Flour	7,919 50	
Butter	3,766 60	
Cheese	39 93	
Barley, rice, peas, and meal	1,051 88	
Coffee	709 02	
Eggs	153 86	
Fruit	131 69	
Fish	506 21	
Salt, pepper, mustard, and vinegar	228 60	
Sugar	3,047 51	
Tea	1,939 40	
		29,648 01

Bedding and clothing :

Bedding and clothing	3,036 35	
Shoes	700 80	
		3,737 15

Fuel, light, scrubbing, and cleaning :

Fuel	15,245 11	
Gas	2,204 00	
Oil	167 70	
Brushes, brooms, and mops	264 86	
Bathbrick, blacklead, and blacking	22 45	
Matches	6 50	
Soap	268 91	
Laundry	648 90	
		18,828 43

Miscellaneous :

Advertising and printing	133 47
Stationery	29 90
Furniture	383 80
Crockery and glass-ware	32 70
Postage, telegraph, and express	154 54
Feed and fodder	292 42
Farm	663 93
Repairs	1,755 63

Brought forward	163 37	54,558 75
Interments	$133 00	
Improvements	84 98	
Incidentals	87 59	
Amusements	115 29	
Clergyman's cab-hire	79 00	
Furnaces	112 92	
Engine-house	154 60	
Tobacco	361 98	
Law expenses	15 60	
Draining	162 98	
Ice	60 00	
Library	13 00	
Farm tools	52 74	
Recovery of elopers	29 40	
Straw	780 48	
Fencing farm	97 04	
Freight	18 55	
Removal of patients	20 45	
Potatoes	341 56	
Officers' travelling expenses	85 70	
Salaries and wages	20,470 03	
		26,722 46
		$81,281 21

STATEMENT of the Expenditure of the Asylum for the Insane, London, for the year ended, 30th September, 1872.

Medical Department:		
Medicines, medical comforts and appliances	116 24	
Beer, wine and spirits	1,533 12	
		1,649 36
Household Expenses (Food):		
Soda biscuits	15 83	
Butcher's meat	5,730 68	
Flour	5,196 08	
Butter	2,142 30	
Barley, rice, peas and meal	708 04	
Coffee	364 78	
Cheese	46 03	
Eggs	181 96	
Fruit	367 12	
Fish	310 45	
Salt, pepper, mustard and vinegar	185 79	
Syrup and sugar	2,152 36	
Tea	882 69	
Fowl	36 00	
Vegetables, beans and potatoes	30 07	
		18,350 18
Bedding and Clothing:		
Bedding and clothing	5,918 27	
Shoes	1,036 15	
		6,954 42
Carried Forward		26,953 96

Brought forward		26,953 96
Fuel, Light, Scrubbing and Cleaning:		
Fuel	6,274 60	
Gas, oil, and candles	1,409 63	
Brushes, brooms and mops	127 10	
Bathbricks, blacklead and blacking	17 20	
Matches	10 00	
Soap	870 32	
Laundry	322 12	
		9,030 97
Miscellaneous:		
Advertising and printing	293 01	
Stationery	130 69	
Furniture	425 04	
Crockery and glassware	60 57	
Postage, telegraph and express	212 94	
Feed and fodder	559 50	
Farm	1,883 62	
Ice	133 90	
Customs duties	28 00	
Officers' travelling expenses	222 63	
Eloping, recovering	31 12	
Freight	163 72	
Incidentals	134 64	
Interments	209 00	
Removal of patients	4 00	
Repairs	2,309 59	
Amusement and instruction	253 61	
Farm Stock	1,353 60	
Rent and taxes	121 90	
Hardware and tinware	691 23	
Tobacco and pipes	307 95	
Clergyman's cab-hire	80 00	
		9,610 26
Salaries and wages		17,343 02
		$62,938 21

Asylum Estimates for 1873.

Estimate of the Expenditure of the Asylum for the Insane, Toronto, for the year commencing 1st January and ending 31st December 1873. (For 640 patients.)

Medicines and medical comforts		327 00
Butcher's meat	10,520 00	
Flour	9,100 00	
Butter	4,070 00	
Beer, wine and spirits	1,950 00	
General groceries	8,000 00	
		33,640 00
Fuel		10,400 00
Gas and oil		2,400 00
Carried forward		46,767 00

Brought forward			46,767 00
Bedding and clothing			6,000 00
Furniture and furnishings			1,000 00
Laundry, soap and cleaning			1,500 00
Farm, feed and fodder			1,500 00
Miscellaneous			1,600 00
Repairs and alterations			2,000 00
Salaries and Wages:	No. of Officers and Employees.		
Medical superintendent	1	2,000 00	
Assistant do.	1	1,000 00	
Clinical assistant	1	300 00	
Bursar	1	1,400 00	
2 Student assistants	2	200 00	
Steward	1	600 00	
Matron	1	400 00	
Assistant matron	1	192 00	
Engineer	1	740 00	
Assistant Engineer	1	432 00	
Stokers	2	480 00	
Carpenters	2	1,050 00	
Gardeners	2	432 00	
Porter or messenger	1	240 00	
Baker	1	288 00	
Tailor	1	264 00	
Farmer	1	240 00	
Ploughman	1	216 00	
Night watchers	3	648 00	
Chief attendants	3	792 00	
Ordinary male attendants	22	4,632 00	
Females:			
Ordinary female attendants	23	1,968 00	
Night attendants	3	360 00	
Cooks	8	732 00	
Laundresses	7	612 00	
Housemaids	6	468 00	
Seamstress	1	108 00	20,794 00
	98		$81,161 00

ESTIMATE of the Expenditure of the Asylum for the Insane, London, for the year commencing 1st January and ending 31st December, 1873. (For 600 patients, which includes the estimated expenditure of the Idiot Asylum.)

Medicines and medical comforts		300 00
Butcher's meat	8,500 00	
Flour	7,500 00	
Butter	3,000 00	
Beer, wine and spirits	1,750 00	
General groceries	7,500 00	
		28,250 00
Fuel		7,500 00
Gas and oil		2,000 00
Bedding and clothing		6,000 00
Carried forward		44,050 00

Brought forward			$44,050 00
Miscellaneous (continued) :			
Furniture and furnishings			1,000 00
Laundry and soap			800 00
Farm, feed and fodder			2,000 00
Repairs and alterations			2,000 00
Salaries and Wages:	No. of Officers and Employees.		
Medical superintendent	1	2,000 00	
Assistant do.	1	1,000 00	
Bursar	1	1,200 00	
Steward	1	600 00	
Matron	1	400 00	
Engineer	1	740 00	
Assistant Engineer	1	400 00	
Stokers (1 Idiot Asylum)	2	432 00	
Carpenter	1	500 00	
Gardener	1	400 00	
Assistant gardener	1	216 00	
Butcher	1	192 00	
Porter or messenger	1	192 00	
Baker	1	300 00	
Tailor	1	264 00	
Farmer	1	340 00	
Ploughmen	3	1,008 00	
Night Watchers	2	432 00	
Chief attendants	4	1,020 00	
Ordinary male attendants	16	3,216 00	
Cowman	1	216 00	
Females:			
Chief attendants	3	540 00	
Ordinary female attendants	17	1,524 00	
Night attendants	2	240 00	
Cooks	3	420 00	
Laundresses	4	432 00	
Housemaids	6	504 00	
Dairy maid	1	96 00	
Seamstress	1	120 00	18,944 00
	80		$70,794 00

ASYLUM FOR INEBRIATES.

Having received Instructions from the Government to collect information in regard to Inebriate Asylums, and if necessary to visit some of these establishments in the United States, in order, by personal inspection, to ascertain the class of buildings required and their general arrangement, and to inform myself as to the mode of treatment, domestic management and general results, I now have the honour to present for the information of His Excellency the Lieutenant-Governor, the result of my enquiries and observations in relation to this subject.

Of the prevalence and, in many communities at least, the apparent increase of drunkenness in this Province, it is hardly necessary here to write at length, nor need I at present more than barely allude to the baneful consequences of this habit to individuals and to communities at large. The existence and extent of this crying social evil are already sufficiently well known. It is enough for our present purpose to note the fact that existing laws and institutions have proved lamentably inadequate to repress or control the evil of drunkenness ; and that a conviction that this is the case has taken possession of the public mind. Under these circumstances it seems obviously the duty of the Government to consider whether some other means may not be taken to check the great and probably growing curse of inebriacy. And the experience of other countries as well as the testimony of many of the highest authorities on this subject in the medical profession seems to indicate the class of institutions known as Inebriate Asylums as the best means that can be adopted for this purpose.

In the Report of the Select Committee appointed by the British House of Commons to enquire into the best plan for the control and management of habitual drunkards, (a document to which we shall have frequent occasion to refer, and a considerable part of which will be incorporated in this report), it is stated : "That it is in evidence as well "from those who have conducted and are still conducting reformatories for inebriates in "Great Britain, as from those who are managers of similar institutions in America, that "sanitoria or inebriate reformatories are producing considerable good in effecting amend-"ment and cures in those who have been treated in them." "The average number of "cures is stated to be from 33 to 40 per cent. of the admissions, this percentage being "based on subsequent inquiry, from which the cures appear to be as complete and per-"manent as in any other form of disease mental or physical." Dr. Willard Parker, of New York, in an essay read at the meeting of the American Association for the cure of Inebriates, held in November, 1871, makes the following important statement :—"Ine-"briate Asylums have taught us that inebriety is curable ; that the depraved appetite is "overcome, as the diseased condition on which it depends is removed, and in many cases "the cure is radical and permanent." This opinion of a distinguished American physician as to the curability of inebriacy and as to the expediency of treating it in Asylums designed expressly for that purpose is borne out by the testimony of many other eminent physicians, from the United States and Great Britain, who appeared before the committee above referred to—including such high authorities as Dr. James Crichton Browne, Dr. Alexander Peddie and Dr. Forbes Winslow.

The statements and opinions which have been here cited are sufficient to prove that the plan of treating drunkenness as a *disease*, and of establishing hospitals for its cure or amelioration is not chimerical or impracticable, but is one which gives greater promise of success than any other that can be adopted, and which therefore demands the serious consideration of Government.

I say the serious consideration of *Government* ; for it seems clearly right that the establishment of such an institution in this Province, should be undertaken by Government instead of being left to private enterprise and benevolence. For, in the first place, it is altogether probable that in the latter case such an institution would not be established at all. The information possessed by the public upon this subject is as yet extremely meagre—sufficient perhaps to have awakened a good degree of interest in it, but quite insufficient to induce practical effort and to call forth the requisite funds. Besides this the work would be better done by the Government than by any private individual or company. All the needs of such an establishment in regard to its buildings and their appointments and to the securing of the best officers and servants would thus be more generously supplied, its management and supervision would be more thorough, and the rights of the subject would be more carefully guarded. And last of all the establishment and maintenance of an Asylum of this character falls within the true sphere and work of the Government. It would be pre-eminently an institution of *public utility*, as the evil against which it would contend is pre-eminently a public burden and calamity. The degree of disease, idiocy, insanity and crime directly and indirectly caused by drunkenness, and the extent of the pecuniary expenditure out of the public funds together with the decrease and limitation of the general wealth thus occasioned are simply incalculable.

This duty of providing reformatories for inebriates seems even more clearly to devolve upon the Provincial Government when we consider that a considerable annual revenue is derived from licenses for the sale of liquor, *and paid into the Provincial Treasury.*

What could be more appropriate and just than that a part of the public money received from that source should be devoted to the remedy and control of the great evil of intemperance ?

In speaking of the practicability of Inebriate Asylums, allusion was made to the experience of other countries on this subject. In Great Britain, there appear to be a considerable number of institutions for the cure of inebriacy, but so far as I am aware there are as yet none in that country that were established and are managed by the State. They are all owned and carried on by individuals or corporations. But the question of the establishment of State Inebriate Asylums has already been brought to the notice of Parliament, and of the country. In February, 1872, a Select Committee of the House of Commons was appointed " to inquire into the best plan for the control and management " of Habitual Drunkards." This committee instituted a most thorough and exhaustive investigation of the subject, and received evidence and information regarding it from more than 30 witnesses—comprising eminent physicians, Inspectors of Lunatics, Police Officers, and managers of Inebriate Asylums in Great Britain and the United States.

The Report of their proceedings is upon the whole favourable to the scheme now under consideration ; indeed they actually recommend that reformatories for inebriates be provided by the State. The precise character of their recommendations will be seen from the following extract from their report—which, besides, contains much valuable information on this general subject. It need hardly be remarked that some of the suggestions and statements contained in this extract are inapplicable to this country.

" The Select Committee appointed to enquire into the best Plan for the Control and " Management of Habitual Drunkards ;—Have considered the matters to them referred, and " have agreed to the following Report :—

" That there is entire concurrence of all the witnesses in the absolute inadequacy of " *existing laws to check drunkenness*, whether casual or constant ; rendering it desirable that " fresh legislation on the subject should take place, and that the laws should be made more " simple, uniform, and stringent.

" This is the more requisite, as there is much evidence to show that in large towns and " populous districts, the great evil of drunkenness is on the increase, attributed in some " measure to the higher wages and shortened hours of labour. This does not appear to be " equally true of agricultural districts and populations.

"That small fines and short imprisonments are proved to be useless, as well by the "testimony of competent witnesses, as by the fact that the same individual is convicted "over and over again, to even more than 100 times.

"That drunkenness is the prolific parent of crime, disease, and poverty, has received "much additional confirmation. It is in evidence that a large proportion of the *criminals* "passing through our gaols attributed their fall to drink, one witness having stated "the amount as equal to 75 per cent. in a particular gaol; about 20 per cent. of the *insanity* "recorded in Great Britain, and about 14 per cent. in the United States of America. "are placed to the same cause; and nearly one-half of the idiots in the latter country "are stated to be the offspring of intemperate parents.

"That occasional drunkenness may, and very frequently does, become confirmed and "habitual, and soon passes into the condition of a disease uncontrollable by the individual, "unless indeed some extraneous influence, either punitive or curative, is brought into play.

"That self-control is suspended or annihilated; moral obligations are disregarded; "the decencies of private and the duties of public life are alike set at nought; and indivi- "duals obey only an overwhelming craving for stimulant to which everything is sacrificed.

"That this is confined to no class, condition, or sex, and hardly to any age.

"That the moderate use of alcoholic liquors is unattended by any bad effects, while "there is much to prove that excess in ardent spirits is far more deleterious than similar "excess in wine or beer. There are also strong reasons for believing that some consider- "able amount of helpless drunkenness and frenzied intoxication is due to adulteration, or to "the use of new spirits containing substances of the nature of ethers.

"That it is in evidence that there is a very large amount of *drunkenness* among all "classes and both sexes, *which never becomes public*, or is dealt with by the authorities, but "which is probably even a more fertile source of misery, poverty, and degradation than "that which comes before the police courts; for this no legal remedy exists, and without "further legislation it must go on unchecked. Legislation in such cases was strongly "advocated by all the witnesses before the Committee.

"That the absence of all power to check the downward course of a drunkard, and the "urgent necessity of providing it, has been dwelt upon by nearly every witness; and the "*legal control of* an habitual inebriate, either in a reformatory or in a private dwelling, is "recommended, in the belief that many cases of death resulting from intoxication, includ- "ing suicides and homicides, may thus be prevented.

"That this power is obtained easily, at moderate cost, and free from the danger of "abuse and undue infringement of personal liberty, has been stated in evidence, by "quotations from American and Canadian Statutes (Question 2620) as well as by the wit- "nesses from America.

"That though the habit of frequent or prolonged intoxication leads in the end to in- "sanity, yet there is a difference between the paroxysm of intoxication and insanity proper, "so distinct as to forbid the plea, in bar of punishment, that an offence was committed "while drunk; still, placing inebriates in lunatic Asylums (except for a very brief period, "*e.g.*, during a paroxysm of delirium tremens) is improper, and should not be allowed. The "presence of recovering inebriates in an ordinary hospital for the insane is prejudicial to the "other inmates in various important particulars, while the discipline and diet needed for "the insane is unsuitable for the convalescing inebriate.

"'That after three convictions,' for drunkenness and disorderly conduct within twelve "months, the magistrates should be empowered to require the offender to find a surety or "sureties for sobriety and good conduct for a fixed period, and in default of the same, or "in case the surety is forfeited by a fresh offence, then to sentence the offender to a consi- "derable period of detention in an industrial reformatory for inebriates as hereafter recom- "mended. The system of sureties has been applied with excellent results in Sheffield; and "though it appears practicable under the common law, it would be well to repeal the old "statutes and enact new.

"There is good reason for believing that such a measure would not only have much "restrictive influence on the drunkard, but would bring the efforts of relatives and friends, "and especially of the surety, into active exercise.

"That all fines and convictions should be registered and recorded in the Drunkards "Register, and the Court of Petty Sessions should have the power of estreating the recog

"nisances, when forfeited, without being obliged to resort to the present slow and expen-
"sive mode of recovery.

"That when an offender has been called upon to find sureties, and has been unable to
"do so, or when by a fresh offence he has forfeited them, or when he has been called upon
"a second time to find sureties, he should be deemed and registered as an 'Habitual
"Drunkard,' and as such may be sent to an industrial inebriate reformatory by magistrate's
"order for a term of not less than three nor more than twelve months, the time to be
"governed by the frequency of the offence.

"That when acts of violence or other offences are superadded to the drunkenness, the
"ordinary punishment awarded by law to those offences should be carried out, and if the
"offender comes under the definition of an habitual drunkard, a committal to a reform-
"atory may form part of the sentence, or it may be left to the discretion of the magis-
"trate to send him at once to an inebriate reformatory.

"That it is in evidence as well from those who have conducted and are still conducting
"reformatories for inebriates in Great Britain, as by those who are managers of similar
"institutions in America, that sanatoria, or inebriate reformatories are producing consider-
"able good in effecting amendment and cures in those who have been treated in them.

"The average number of cures is stated to be from 33 to 44 per cent. of the admissions,
"this percentage being based upon subsequent inquiry, from which the cures appear to be
"as complete and permanent as in any other form of disease, mental or physical. The
"average time occupied in effecting these cures is stated at from 12 to 16 weeks in Ame-
"rica. For the English institutions the period has been longer.

"That the proportion of *cures is not larger* is attributed by all the witnessess to a *lack*
"*of power* to induce or to compel the *patient* to submit to treatment for a longer period, and
"that power is asked for by every one who has had, or still has, charge of these institutions.
"Without such a power it appears that the results must be imperfect, disappointing, and
"inadequate to the efforts made.

"The Recommendations of the Committee are:

"1. Definition.—That sanatoria or reformatories for those who, 'notwithstanding the
"plainest considerations of health, interest, and duty are given over to habits of intemper-
"ance so as to render them unable to control themselves, and incapable of managing their
"own affairs, or such as to render them in any way dangerous to themselves or others,'
"should be provided.

"These reformatories, whether of Class A or B, should be inspected from time to time
"by a committee appointed by magistrates at quarter sessions, of not less than five per-
"sons, of whom one at least shall be a medical man, and the inspection of these institutions,
"whether of a private or public character, should be of a very stringent nature.

"Reformatories on the industrial system should be established, either as separate in-
"stitutions or as part of a prison, *but distinct from the ordinary penal* portion thereof, or as
"part of a union workhouse, to which persons committed as habitual drunkards should be
"sent.

"The proceeds of their labour should be applied to the payment of the entire cost of
"maintenance while in the reformatory; if any excess remain, it should be applied to the
"maintenance of the wife and family, or if they be in receipt of parochial relief, then to
"reimburse the union fund, or if there be no wife or family or parochial charge, then to the
"uses of the individual on leaving the reformatory.

"Your Committee, after considering the whole question as to the best mode of dealing
"with drunkards, including not only the management of inebriate Asylums, but also the
"control and prevention of the habit of drunkenness, have arrived at the following addi-
"tional conclusions and recommendations:—

"That the fine for drunkenness for the first or second offence [when it is most desirable
"to prevent the formation of the *habit*] should not exceed 40*s*., or in default thereof, im-
"prisonment for a period not exceeding 30 days [being for the same term as that imposed
"in the United States]; the precise amount of both fine and imprisonment being left to
"the discretion of the sitting magistrate; and that, after the third conviction within 12
"months, the magistrate should have the power of insisting upon sureties, not exceeding
"10*l*., as under the Statute of James I."

It is however in the United States that the experiment of the treatment of inebriety in Asylums, specially devoted to it, has been most fully tried. There are in that country 10 institutions of this character. They all, with a single exception, receive contributions and support from the State, are regulated by charter or act of incorporation, and are managed by Committees. Each is a State as distinguished from a national institution and much greater powers are given by some State legislatures than by others. They have nevertheless orginated either with societies or individuals actuated by philanthropic motives, and are partly maintained by them.

The average period during which these institutions have been working is somewhat over five years, a sufficiently long one to have furnished a pretty fair trial of their utility and success. Mr. Donald Dalrymple, the chairman of the Committee of the House of Commons heretofore referred to, who undertook a special voyage to America to inspect these establishments, and to examine the working of the system on this Continent, and to whom we are chiefly indebted for the information here detailed, stated in his evidence before the Committee that he had "made many inquiries of persons other than those connected with Inebriate Asylums (medical, legal, clerical, and lay) as to the effect produced by them, and received many and various opinions, but on the whole largely in favour of their utility." It must be borne in mind that these Inebriate Asylums in the United States have laboured under certain disadvantages which, in my opinion, may be avoided in this Province; especially as their usefulness has been very largely impaired and crippled through lack of authority on the part of their trustees or managers to compel patients once admitted to remain long enough to effect a cure. Indeed, in the opinion of all who have charge of reformatories for drunkards as well as of those who have most carefully studied their workings, this has been the grand obstacle to their efficiency and success.

Notwithstanding this, however, the results thus far accomplished have been to a very good degree satisfactory and encouraging. "The grand total of admissions to *nine* of these establishments since their opening is 5,959, of whom 1,305, or nearly 23 per cent., were admitted once; 227, or nearly four per cent., were admitted twice; and 94, or nearly two per cent., were admitted thrice. Of such admissions 5,515, or 94 per cent., were voluntary; 144, or between two and three per cent., were admitted by the intervention of friends, and 217, or nearly four per cent., were committed by justices, the results being, that, of the 5,959 who have been under treatment, 2,018, or nearly 34 per cent., were cured snd discharged; 318, or nearly five per cent., received benefit; eleven died, three became insane, and 378, or between six and seven per cent., were returned as incurable."

Two of these Asylums—that at Binghamton and that on Ward's Island, New York—I have myself visited, and, by careful personal inspection and conversation with their managers and other officers, have informed myself in regard to the internal arrangements and appointments of their buildings and premises, their domestic management and modes of treatment, and the general results accomplished.

The Binghamton Asylum, which I visited on the 16th October last, is, so far as I am aware, the largest, and probably the most widely known Institution of the kind in the United States. The building, most beautifully situated about three miles from the town of Binghamton, and a very costly and handsome one, was erected by a company of shareholders, but about two years ago passed into the hands of the State of New York—the State having taken up a mortgage upon the property. At present the Institution receives no pecuniary aid from the Government, but it is anticipated that an annual grant will be voted at the next meeting of the Legislature. There is now accommodation for 110 patients, but when the west wing of the building shall have been finished off and furnished there will be accommodation for rather more than twice that number. The average number of inmates is 85. The rooms of the patients are most commodious and comfortably furnished, although the character of the furniture, &c., varies according to the sum paid. The dining-room, the table appointments, and the food were all that could be desired; and all parts of the establishment gave evidence of perfect order, cleanliness, and of thorough and efficient management. Indeed the impression one would naturally receive from a visit to this Institution is not so much that of an asylum or hospital as of a first-class temperance hotel. The vast majority of the inmates at the time of my visit (and I was

informed that this was usually the case) were plainly of the more wealthy and intelligent classes of the community. They were, with scarcely an exception, well dressed and educated, and gentlemanlike in their appearance. To certain other important features of the Binghamton Asylum I shall have reason to refer hereafter.

The Asylum situated on Ward's Island is a much smaller establishment than that at Binghamton, and is in nearly every respect different from and inferior to the latter. The building is a very large and even elegant one, it is in all its parts kept most scrupulously clean, and the managing physician evidently does all that the circumstances of the case will permit to effect the reclamation of the patients committed to his charge. But the obstacles against which he has to contend are simply insuperable, and the Institution, *as a Reformatory for the cure of Inebriates*, it seems to me, must be regarded as a practical failure. Three-fourths of the inmates are compulsorily committed, and of these the vast majority are from the low and vicious drunken classes of the city of New York. Many of them reach the Inebriate Asylum as it were indirectly, having been in the first instance committed to the workhouse for vagrancy and petty offences and afterwards transferred to the former establishment. The average term for which these compulsory patients were committed was stated to be four weeks. It is perfectly obvious that no permanent good can be done to this class of patients in so brief a period. On the whole the Ward's Island Institution seems rather a place of detention for drunkards than an Inebriate Asylum.

I have thus far attempted to show, by reference to the opinions of eminent authorities and to the beneficial effects already produced, that Inebriate Asylums are not only practicable, but are the best means that can be adopted to control and check the great evil of drunkenness. I have also pointed out some reasons why such an institution in this Province, if established at all, should be established by the Provincial Government; and have briefly indicated what has already been done or proposed in reference to the treatment and cure of inebriacy through Asylums or reformatories in Great Britain and the United States, and what have been thus far the general results accomplished.

Passing now to the practical conclusions at which I have arrived, and to the suggestions I have to offer in reference to the establishment and organization of an Inebriate Asylum in our own Province, it is important at the outset to call attention to the limits within which such an institution amongst ourselves is likely to be useful or successful, and to indicate precisely what *class* of inebriates we may expect to be benefited by it. Of course we cannot hope that all the victims of this vice and disease will be reached by the means now under consideration.

Those who are addicted to drunkenness may, I think, be divided into three classes. 1st. Those who, in consequence of intemperate habits, have rendered themselves obnoxious to punishment for more or less serious violation of the laws of the country. This class includes not only those who have become properly speaking *criminals*, but also that large numbers of idle and vicious persons who figure in the records of our police courts as "drunk and disorderly."

2nd. Those who, in consequence of their intemperance, habitually or occasionally fail to provide for the wants of their families. Their conduct, though not a positive infraction of the laws, tends to produce pauperism, and deprives the community of profitable and wealth-producing labour. This class is composed for the most part of labourers, mechanics and other members of what are called the industrial classes.

3rd. The third class comprises those more wealthy or better educated persons engaged in commerce and the various professions, with whom the habit of drunkenness, generally speaking, directly affects only themselves and their families—except by way of example.

For the first of these classes, that of disorderly and criminal drunkards, I fully believe that the Central Prison will afford the best Inebriate Asylum, particularly if after the third offence and after a spirit of persistence in their evil habits has been manifested, they be sentenced for a term of from three months to a year, instead of for a few days or weeks. This class we may hope to reclaim, if at all, only by compulsion, and therefore it is highly important that they should be incarcerated for a long enough period to eradicate the craving for stimulants and to confirm them in habits of temperance.

In connection with this topic I may be permitted to refer to what I have already said

in regard to the Central Prison as a means of reclaiming criminal drunkards at page 5 in my Report for 1869-70.

"The strongest argument that can be advanced, in favour of the establishment of Central Prisons or Houses of Correction at central points, is given in the column of Gaol statistics under the heading of "habits of prisoners," showing that of the 6379 prisoners committed to the several Gaols of the Province during the past year, 4080 were intemperate in their habits. From this great evil springs vagrancy, petty larceny, and very often more serious offences, but more frequently it goes hand in hand with its twin brother "disorderly conduct." The form of sentence in these cases has now become stereotyped, "dollars or 10 to 60 days with *hard labour* in the common gaol." The moral delinquent enters the gaol, consorts with hardened offenders, sees crime in every phase, and forms the acquaintance of criminals. The time of incarceration expires and he is set free, but the unfortunate *mania* speedily overtakes him and he is again brought before the Court, and the sentence is repeated, perhaps with a few days or weeks added to it, until the man or woman becomes almost a constant inmate of the gaol, a curse to society when at liberty, and a constant charge and drain upon the resources of the Province at all times, and will continue to be, until the law, looking upon this class of men and women as being morally insane, places them under restraint in a well ordered House of Correction for terms varying from two months up to two years, where, being removed for long periods from constant and unrestrained association with vicious society, their debilitated constitutions built up and restored under a good sanitary regimen, wholesome food, and a well conducted and temperate life, and taught habits of industry by employment in mechanical pursuits, the strong probability is that many of this class would return to the world with a knowledge of some trade or branch of industry, to become honest and industrious men and women. The best feature of an institution of this description, in a moral point of view, is, that its establishment would supply another link in the chain of public charities, the absence of which is seriously felt, and more particularly with the class under consideration, inasmuch as it would combine in its administration all the characteristics of an Inebriate Asylum, with many of its good results, by the removal of the very worst victims of intemperance from the temptations that they are constantly exposed to while at liberty."

We may thus assume that adequate provision has already been made for this first class of inebriates. Nor is the degree and proportion of drunkenness thus provided for in the Central Prison inconsiderable; for the General Statistics for the past year show that of the 6,958 prisoners committed to gaol no less than 4,261 themselves acknowledged that they were intemperate, and 2,615 were actually committed for drunkenness and disorderly conduct.

It is then for the second and third of the above classes, comprising those inebriates who do not become amenable to control and confinement under existing laws, that provision yet remains to be made. Of course by inebriates in this connection are meant not those who are merely in the habit of drinking to excess, but those who are so given over to "*intemperance as to render them unable to control themselves, and incapable of managing their own affairs, or to render them in any way dangerous to themselves or others.*" For drunkards of this description, whether they belong to the industrial or to the commercial and professional classes, it should, as it seems to me, be the purpose and endeavour of the Government to provide the means of reformation and cure through Inebriate Asylums, just as similar provision is already made for the insane and for the sick and wounded. But that this purpose can at once be fully carried into execution is more than is at present to be expected. The extent of expenditure involved in executing such a purpose; the degree of labour and thought that should be expended in devising a perfect system of Inebriate Asylums; the more or less immature and experimental character of these institutions in other countries—these and similar considerations render it necessary to inaugurate the system on a small scale, and according to a more or less undeveloped plan.

Having thus pointed out the classes and description of inebriates for whom an Asylum should be provided, we may now say a few words upon the manner and terms of admission to it. To the Inebriate Asylums of the United States patients are admitted either upon their voluntary application or through commitment by a magistrate, procured either through the intervention of friends or of other persons. To illustrate the latter mode of

commitment I may refer to an Act passed by the Legislature of the State of New York, in March, 1865, for "the better regulation and discipline" of the Asylum at Binghamton, which provides that "Any Justice of the Supreme Court, or the County Judge of the county in which any inebriate may reside, shall have power to commit such inebriate to the New York State Inebriate Asylum, upon the production and filing of an affidavit or affidavits, by two respectable practising physicians, and two respectable citizens, freeholders of such county, to the effect that such inebriate is lost to self-control, unable from such inebriation to attend to business, or is thereby dangerous to remain at large. But such commitment shall be only until the examination now provided by law shall have been held, and in no case for a longer period than one year."

Similar laws have been passed in several other States. There was also an enactment of like character passed by the Legislature of the Province of Quebec, February 1, 1870, which is referred to by Mr. Dalrymple as remarkably stringent. The recommendations of the Select Committee of the House of Commons in regard to the topic now under consideration are as follows :—

"The admissions to these institutions should be either voluntary or by committal. In either case the persons entering should not be allowed to leave except under conditions to be aid down, and the power to prevent their leaving shall be by law conferred on the manager. Though practically this power would be seldom put in force, it will be useless to establish these institutions without it.

"The patients under Class A. should be admitted either by their own act, or, on the application of their friends or relatives, under proper legal restrictions, or by the decision of a local court of inquiry, established under proper safeguards, before which, on the application of a near relative or guardian, or a parish or other local authority, or other authorised persons, proof shall be given that the party cited is unable to control himself, and incapable of managing his affairs, or that his habits are such as to render him dangerous to himself or others ; that this arises from the abuse of alcoholic drinks or sedatives, and he is therefore to be deemed an habitual drunkard.

"If that proof be deemed sufficient by the court of inquiry it shall make an order for commitment to an inebriate institution for such a term as it shall think proper, not exceeding twelve months, and shall also have power, with or without such commitment, to make an order for the appointment of a guardian or trustee of the cited party, person, and estate. The party cited shall have the right to be present, both in person and by counsel, and all the evidence shall be taken on oath. The property of the party shall be liable for maintenance ; the trustee or guardian shall be liable as in committees of the person and estate of lunatics, Act 25 and 26 Vict. c. 86.

"Persons convicted as habitual drunkards according to the definition laid down in the 18th paragraph of this Report, whose means are inadeqnate, may be sent by magistrates by commitment to the B. class of reformatories.

"The period of detention should be fixed by the court of inquiry, or by the magistrates, but may be curtailed upon sufficient proof being given that a cure has taken place. No manager of a Reformatory, or guardian, or trustee, or committee shall be liable to action for damages for acting under the orders of the court of inquiry or of the magistrates."

That some enactment should be passed by the Legislature of this Province, by virtue of which any inebriate who is *plainly* a fit subject for treatment in an Asylum may be sent thither whether he will or not, I have no doubt ; but the precise nature and details of such an enactment need not be here discussed.

I believe, nevertheless, that should a Reformatory for Inebriates be established here, the vast majority of its inmates, for the present at least, will be those who have entered it of their own accord. We have already seen that. notwithstanding the Statute to which I have referred above, 94 per cent. of the total admissions to the Inebriate Asylum of the United States have been voluntary. Nor do I think that this state of things, should it arise, will be one to be greatly regretted for the present. For the universal experience of the managers of these establishments shows that the voluntary patients are much more likely to receive benefit than those who have been committed ; and besides this it is probable that there will not be for some time sufficient space to accommodate all who are proper subjects for treatment in the Institution. And then again, as we have

seen, provision has already been made through the Central Prison for a considerable proportion of those who need to be dealt with compulsorily.

A fear may be entertained by some, even of those who would approve of the establishment of an Inebriate Asylum in this country, that the number of voluntary applicants for admission will be so small as to render its establishment hardly worth while. And there will be, we can scarcely doubt, a considerable degree of reluctance to enter such an institution on the part of inebriates, arising out of a false delicacy of feeling in regard to this subject amongst them and their friends; but, I believe, that as the aim and character of the Asylum becomes better understood, this reluctance will gradually disappear, and inebriates will apply for admission to it as those suffering from other diseases now do to ordinary hospitals. Indeed the formation of a sound and intelligent public opinion on the subject of drunkenness is one of the indirect benefits to be looked for from this Institution. In regard to voluntary applicants it should be remarked that they should be admitted under two important conditions or restrictions. The first is that, as a general rule, they should be previously ascertained to be curable cases and honestly desirous of amendment. The establishment should be *not a retreat, but a reformatory* for drunkards. The second condition is that power should be conferred upon the superintendent, carefully defined and guarded, by which all who have once entered, either voluntarily or by commitment, may be kept in the Institution long enough to effect a cure or to prove their cases to be incurable. The importance of such a provision cannot be over-estimated.

Another important question to be determined in connection with the establishment of an Inebriate Asylum in this Province is whether admission to it should be granted to those only who are able to pay for their support and treatment, or to those also who are unable to do so. In the chief reformatories for drunkards in the United States nearly all of the inmates are of the former class, even where provision is professedly made for the latter also. In the Report of Binghamton Asylum for 1871 it is stated that 20 per cent. of the admissions for that year were free patients; but I believe, as a general rule, the proportion of non-paying residents is not at all so great as that. At the time of my visit there were only eight out of 83 altogether. The standing charge there for board, washing, and *ordinary* care and attendance is $20 per week, but a good number of the patients pay considerably more than that, some even paying the large sum of $40 per week. On the other hand "the Committee of Management and Discipline may reduce the price"—below $20 that is—"upon a presentation of the facts upon which a modification is requested." This establishment not being at present in receipt of Government aid is necessarily carried on on the self-supporting principle, and even the small number of free patients who are admitted are in reality supported by the excess of compensation paid by the wealthier inmates. The fact that so few of the class unable to pay can be received is an occasion of great regret to the present manager and is, in my own opinion, a very serious objection to this generally excellent Institution.

It will no doubt be generally conceded that an Inebriate Asylum established by the Government in this Province should be conducted on a more humane and generous system, and that any inebriate shown after proper examination to be a reasonably hopeful subject for treatment, should be admitted whether he be able to pay or not. A state institution established for such a purpose as the correction or cure of drunkenness surely ought not to discriminate in favour of the rich; although, of course, patients having been once admitted, the character of their accommodation may very justly be determined to some extent by the fact that they do or do not pay.

I am of opinion also that even in the case of those who, by themselves or through aid of their friends, are able to pay for their support, the rates charged should be as low and uniform as possible, and should be based upon the actual cost of daily maintenance, without regard to interest on capital outlay. The Government, in the establishment and management of an institution of this character, should have regard chiefly to moral and reformatory rather than pecuniary results.

Before passing to the brief practical recommendations with which this Report will close, it seems to me desirable to convey a general idea of the mode of treatment which is adopted in Inebriate Asylums, and of the peculiar appointments and conveniences required by them. As regards the former point, though there seems to be some slight

difference of opinion, I believe a correct impression will be gathered from the following sentences from the pen of Dr. Dodge, a gentleman of large experience and recognized authority in this specialty :—

"Nearly all patients, on their admission, require medical treatment. Stimulant, sedative and narcotic remedies are usually administered at the outset, followed by alterative medicines to improve and correct the secretions; after which, tonics, both vegetable and mineral, are given, calculated to add tone and strength to the system. When we have organic disease, appropriate remedies, adapted to each particular case, are administered to relieve and assist nature in removing the same. Outside of these functional and organic difficulties, very little medical treatment is demanded or required. Our main reliance is upon sanitary measures, remedial rather than medicinal, and essential to improve and invigorate the physical organization, and as a result adding strength, in the same ratio, to the mental faculties, thus enabling the patient in the future to assert and maintain his self-respect and self-control. In this connection, it may be well to state that as soon as our patient is convalescent, but little, if any, medicine is given, and our main reliance is placed upon the following sanitary and hygienic measures; retirement from business and the busy scenes of every-day life, quiet, reading, writing, pure air, well ventilated rooms, good nourishing diet; regular hours for meals, rising, and retiring; proper physical exercise, such as out-door games, walking, and such mechanical employment as taste and inclination may dictate and opportunity afford. These measures are strongly recommended and urged upon all as conducive to a healthful condition of mind and body, assisting materially in breaking up former habits and associations, driving from the mind those old companions of an intemperate life, forming new thoughts, new ideas, and new and better habits, necessitating a new being and a new life in every respect, and finally convincing all reasonable men who have been addicted to the excessive use of strong drinks, that stimulants are not only useless, but absolutely injurious.

"I will state, for the information of those interested, that we have no specific with which to destroy the craving appetite for alcoholic stimulants, whether acquired by the voluntary act of the subject, or handed down as an hereditary disease and curse."

The general character and arrangement of the building and the special conveniences and appointments required, will be naturally suggested by the above description of the treatment pursued. An Inebriate Asylum should be indeed little else than a comfortable and well-managed temperance hotel, under the supervision of a competent medical man, whose inmates are yet subjected to more or less surveillance and control. It is however essential that more than ordinary provision should be made for the recreation and employment of the inmates. There are in the Binghamton Asylum, a billiard room, a library, a club, a reading-room and a hall for dramatic representations and other entertainments; and yet notwithstanding this generous provision for the diversion and occupation of the inmates, I could not but notice in them a general appearance of vacancy and ennui. Though this must be to some extent unavoidable in the case of men circumstanced as they were, and with their previous habits, I nevertheless firmly believe that this serious obstacle to the success of Inebriate Asylums might be overcome to a much greater degree than it yet has been; by the introduction of appropriate and constant *employment* in addition to the ordinary means of *recreation*. The nature of this employment should of course be suited to the tastes and previous habits of the patients.

As the practical result of my investigation and observation on this subject I respectfully submit, for the consideration of His Excellency's Government, the following recommendations, viz. :—

1. That an institution be established for the reformation of inebriates of the class and description already referred to in this Report—that is to say, "those who are so given over to intemperance as to render them unable to control themselves and incapable of managing their own affairs, or to render them in any way dangerous to themselves or others," but who nevertheless have not rendered themselves liable to control or confinement under existing laws.

2. That for this purpose a plot of land, comprising not less than 100 acres be purchased, and that the requisite buildings for such an institution be erected thereon. That such plot of land be conveniently situated and accessible: that it shall afford a healthful and pleasing site for the buildings required, and that it shall be not more than four nor less

than two miles distant from any city or town. That the building shall be plain but substantial and comfortable, and that it shall be constructed upon such a plan as will admit of future extensions and additions. That it shall at first afford accommodation for 50 inmates, besides the officers and servants. That it be abundantly supplied with means of amusement and recreation, and that a workshop be attached thereto for industrial employment.

3. That this institution shall be for *men* only. That inebriates shall be admitted to it either upon their voluntary application (under the condition indicated in the body of this Report), or by judicial commitment procured through the intervention of friends or otherwise; an Act to be passed authorizing such commitment, and defining its form and circumstances. That authority to detain any person once received into the institution be conferred upon the medical superintendent; the limitations under which such authority shall be exercised, and the period of such detention to be carefully prescribed by special enactment.

4. That from those who are able to pay for their maintenance and treatment a reasonable charge shall be exacted, but that any inebriate coming under the definition above made, and being a *bona fide* resident of the Province, may be admitted to the institution.

5. That any person, before being admitted to the institution, should be decided to be a reasonably hopeful subject for treatment, by examination before some competent authority.

6. I also beg to recommend with reference to criminal and disorderly drunkenness, that the term of sentence to the Central Prison should be lengthened so as to render that establishment a more successful reformatory for the kind of inebriacy not provided for by the institution treated of in this Report.

INSTITUTION

FOR THE

EDUCATION OF THE DEAF AND DUMB,

BELLEVILLE.

Since my last report this Institution has continued to give the most satisfactory evidence of efficiency in management, and of general prosperity and growth : although only established two years, it now ranks, in point of the number of pupils in attendance, tenth among the forty-three establishments of a similar kind in the United States and Canada.

The increase in the number of pupils has been very gradual and steady. Commencing with seventy in the first session, the number reached one hundred and twenty-four before the close of the second term on the 28th June, 1872, and now in the third month of the third term, the number in attendance has reached 135. Upon the whole, this gradual advance from session to session in the number of pupils has been favourable to the educational interests of the Institution as well as to the general management of its affairs. In all new organizations, educational as well as others, there are systems to devise and schemes to mature which can only be well devised and properly matured by a patient and careful observation of every day's progress.

If the Institution had immediately on its opening been filled with pupils, as the number in the Province might have warranted, the effectiveness in educational and domestic administration which now exists could not have been so well secured.

In my report of last year, I shewed that there were then 312 deaf-mutes in Ontario, who should have been under instruction. A few of that number were reported to be a little over the school age specified in the By-laws of the Institution. and some had been partially educated at other schools, but all would, I believe, have derived benefit from a course of instruction in the Institution established by the Province for that purpose.

I now propose to shew in the following summary the number of deaf-mutes who have entered the Institution since its opening on the 20th October, 1870, up to the 30th September, 1872; a period of less than two years. From this the Government and the Legislature will see at a glance what has already been done, and what yet remains to be done bythe establishment founded by their liberality for the benefit of this unfortunate class :—

COUNTIES AND CITIES.	Number of Deaf Mutes of school age in each County.	Number who have entered the Ontario Institution.	Number who have not yet been sent to the Institution.
Algoma	1	...	1
Brant	9	7	2
Bruce	6	1	5
Carleton	12	3	9
Elgin	9	3	6
Essex	3	1	2
Frontenac	4	4	..
Grey	8	5	3
Haldimand	2	2	..
Hastings	10	8	2
Huron	16	14	2
Halton	3	...	3
Kent	9	2	7
Lambton	9	7	2
Lanark	5	2	3
Leeds and Grenville	3	3	...
Lennox and Addington	5	2	3
Lincoln	5	1	4
Middlesex	21	15	6
Norfolk	6	5	1
Northumberland and Durham	23	16	7
Ontario	8	3	5
Oxford	4	2	2
Peel	3	3	...
Perth	12	7	5
Peterboro'	10	1	9
Prince Edward	3	1	2
Prescott and Russell	3	2	1
Renfrew	6	...	6
Simcoe	15	6	9
Stormont, Dundas and Glengarry	8	...	8
Victoria	2	...	2
Wellington	12	6	6
Welland	10	3	7
Wentworth	11	4	7
Waterloo	2	1	1
York	9	6	3
City of Toronto	16	3	13
" Hamilton	6	1	5
" London	2	1	1
" Kingston	2	1	1
	*313	152	161

From the fact that a considerable number of deaf-mutes have been received into the Institution, and a good many more heard from, who were not included in the census then obtained, it may safely be assumed, that there are certainly *not less* than 313 deaf mutes of school age in the Province of Ontario, at the present time.

It is therefore shewn that notwithstanding the liberal provision that has been made by Government, there are still over one hundred and sixty deaf and dumb youths in the Province, growing up in mental darkness and ignorance. As this Institution was founded and designed by the Legislature to supply a most urgent and pressing want, I thought it my duty, as soon as this fact revealed itself, to make a searching enquiry into the circumstances and causes which led to this partial mis-carriage of legislative design, the result of which enquiry I will now present as clearly and briefly as I can.

And first I would state that this partial failure is attributable, and that in no small degree, to the excessive economy of municipal councils, which is laudable and proper enough in many cases, but in this instance, when the elevation of an irresponsible human being from the level of the brute creation to the scale of intelligent humanity is at stake, can only be pronounced petty illiberality and criminal neglect. That there are honourable exceptions to this charge I am happy to state, for there are a few municipal corporations

* Only three reported in Frontenac, but four received into the Institution which makes 313 instead of 312.

which have taken considerable interest in the matter, and have sent forward pupils with great promptitude.

Permissive legislative enactments, in respect to local municipal requirements of a moral and social character, no matter how high the aim, or urgent the need may be, would seem to be practically inoperative, *unless accompanied with a liberal Legislative Grant.* And in the matter now under consideration even *that* does not seem to have had the desired effect; for when we consider that the annual cost of educating and supporting each deaf-mute sent to the Institution is not less than two hundred dollars a year, including interest on capital outlay, it was surely not too much to expect that municipal councils would pay forty dollars a session of that amount for the food of indigent deaf-mutes. But to the majority of municipal councils even this paltry charge has seemed a sufficient excuse for denying their indigent deaf-mutes the great benefits and privileges of this Institution.

By far the largest proportion of deaf-mutes who have not been placed under instruction, are the children of parents unable to pay for their board, while receiving a special education. In fact many parents are supporting pupils at the Institution, who, to my knowledge, cannot afford to pay the amount required for that purpose, but are too independent to make application to a council, which more than likely would refuse their request. Others have two or three, and sometimes even more deaf-mute children, and in such cases, although the parents are in what is termed fair circumstances, the support of so many pupils at the Institution is attended with hardship. Other parents have by a special effort sent pupils for a session or a part of one, when for various reasons, chiefly poverty, they have had to be kept at home. No less than twenty-one deaf-mutes who attended previous sessions have not yet entered this term for these reasons.

When the by-laws were framed requiring all parents, guardians, or friends who were in indigent circumstances, and unable to pay six dollars a month for the board of children, to make application for aid to the municipal corporation in which they resided, it was fully expected that these local governments would exercise a wise liberality in dealing with such applicants; but in this expectation, with a few exceptions, we have been disappointed. This is the chief reason why over one hundred and sixty deaf mutes of school age have not been placed under instruction, and it certainly is not creditable to municipal corporations.

Besides the illiberality of municipal councils, we may find in the conduct of the parents of deaf-mutes additional reasons why so many of that class are deprived of the benefits of an education. Some of these parents are unwilling to relinquish the aid or profits of their children's labour even for the sake of their education; and this class, though not numerous, is not confined to the very poor, for the Principal in his report says—"I am sorry to say that I have been informed of cases where the parents are able to educate their children, but are unwilling to be deprived of their labour while at school."

Another class of parents are those who, though often in very reduced circumstances, are yet, from considerations of pride or undue sensitiveness, unwilling to make application for the requisite municipal aid.

Such being the chief reasons why so considerable a number of our deaf mutes have been deprived of the benefits of the Institution established for their education, they are, in my opinion, only to be overcome by legislative enactment.

When the Institution for the Blind was opened the rate of board for pupils sent by municipalities to that establishment was placed at *one dollar*, and, for parents who were able to pay, *one dollar and a half* per week. For the purpose of encouraging municipalities to deal liberally with deaf-mutes the same tariff was adopted at the Institution for the Deaf and Dumb, and the Principal was instructed to send a circular to the Clerk of every municipality in the Province, advising councils of the reduction in the rate of board from one dollar and a half to one dollar per week. I regret to say that it had little or no effect, and I am forced to the conclusion that any additional attempts or concessions in that direction will meet with the same fate.

In view of the many objections raised by municipalities, and the refusal or neglect of over three-fourths of them to co-operate with the Government in this work; of the liberal and *free* education offered to every speaking and seeing youth in the Province under our educational system; of the severity of the affliction, both to parents and children, of deaf-dumbness and blindness; and of the comparatively small amount of revenue derived

from the payment of the board of pupils; in view of all these circumstances it becomes a question for the serious consideration of the Government and Legislature whether it would not be advisable to solve the problem by throwing the doors of these Institutions open *free* to every deaf-mute and blind youth of school age in the Province of Ontario, except those whose parents are able to pay. This, with the adoption of the principle of compulsory education in respect to deaf-mutes, will effectually overcome the difficulties which have presented themselves under the working of the present system, and will at once enable these establishments to accomplish the work designed for them.

An examination of the terms of admission of 40 Institutions for the Deaf and Dumb and the Blind in various parts of the United States shews the following result:—25 are *free* to all pupils from the State in which the Institution is located; 11 are *free* to pupils whose parents are certified by certain officials to be in indigent circumstances and unable to pay, and in four of them the several counties of the State pay for support of pupils on the certificate of certain officials.

Four statutory inspections have been made of this Institution during the year, in the months of January, May, July and September, besides other visits on business connected with the establishment. On all these occasions the affairs of the Institution in all its departments, both educational and domestic, were being administered in a systematic and efficient manner.

The dormitories, class-rooms, lecture-room, offices, kitchen and other portions of the building, were all found in an orderly and thoroughly well-kept state. The building throughout was sufficiently furnished for its requirements, the beds and bedding were exceedingly clean and tidy, and sufficient in all respects for the comfort and health of the pupils.

Educational.

During my inspections I availed myself of every opportunity, by class and combined examinations of the pupils, as well as by conversation with the Principal and teachers, to obtain accurate information respecting the educational *status* of the Institution. While it must be admitted that the observation and examination of a person unskilled in the technicalities of deaf-mute instruction must necessarily be somewhat superficial in respect to the details of the system, and that an examiner under such circumstances labours under many disadvantages; still it is very clear that the educational proficiency and progress of deaf-mutes can best be ascertained and determined by their ability and aptitude to communicate in writing to ordinary hearing and speaking persons the knowledge they have acquired through technical instruction.

While instructors of deaf-mutes require to avail themselves of every means and appliance in order to impart knowledge, the ordinary speaking world can only pronounce upon the efficiency of these means and appliances by an examination of their results as indicated in the proficiency of the pupils to communicate intelligently the knowledge thus received.

If the results of instruction are in all respects satisfactory, then the object of founding Deaf and Dumb educational institutions is accomplished, and few persons will stop to criticize very closely or unduly magnify the defects—fancied or real—of a system that has a successful ending.

On this principle I examined the pupils of the Deaf and Dumb Institution. There are now seven classes, graded according to advancement and proficiency. Each of these classes are subdivided into sections to suit the capacity of each pupil. These classes and subdivisions were examined in the various branches taught in ordinary schools, some of the pupils in each class were found in a very advanced state, and thoroughly understood the meaning of words and the construction of sentences. Many were quite proficient in arithmetic and geography, and correctly answered the questions put to them. The composition of others on subjects named at the time by me was most creditable, and fully equal to the efforts of ordinary children of the same age in other schools. Considerable progress was also apparent in the middle and lowest grades, in fact all the pupils appeared to be steadily progressing in their studies, and the general educational condition of the Institution was most satisfactory and encouraging.

The establishment of a teachers' weekly class, which I attended at my inspection, has been productive of good, not only in better qualifying the teachers for the discharge of their duties, but in procuring greater uniformity in the method of instruction.

The articulation class continues to receive instruction as reported last year, but inasmuch as various propositions in regard to this branch of the speciality are still under the consideration of the Association of Deaf-mute Instructors I am not yet prepared to recommend the appointment of a skilled special instructor for that class. The Principal submitted several books in arithmetic for adoption. French's series of mental arithmetic, comprising three books, appeared beyond all doubt to be the best, and, on the recommendation of the Principal, it was chosen. The Principal was also authorised to purchase additional books for the library and class-rooms.

At my inspection in January there were 116 pupils in the Institution—viz. 78 boys and 38 girls. Fifty-eight of that number were being supported in respect of payment of board by parents, 49 by municipalities, and nine by the Province as orphans. At my visit in May, which extended over four days, the number of pupils had increased to 120, of whom 80 were boys and 40 girls, supported as follows :—

54 pupils by Municipalities,
53 „ by Parents,
13 „ by the Province, as Orphans.

The current session opened on the 14th of September, and at my visit to the Institution, two weeks after the opening, 124 pupils, 80 of whom were boys and 44 girls, had come forward, and were on the roll. Of this number 61 were supported by parents and guardians, 55 by various municipalities in the Province and eight as orphans.

At the close of the official year, 30th September, the number of pupils had increased to 131.

The following table shews the counties from which these 131 pupils were received, and how they were supported in respect of payment of board :—

Table, shewing the number of deaf mutes that were in the Institution on 30th September, and how supported.

Total number of Deaf Mutes in the Institution on the 30th Sept., and the Counties from which they were received.	Total No.	SHOWING HOW THEY WERE SUPPORTED.		
		Supported by Parents or Guardians.	Supported by Municipalities.	By the Province as Orphans.
Brant	7	3	3	1
Bruce	1	1		
Carleton	2	1	1	
Elgin	4	4		
Essex	1			1
Frontenac	4	4		
Grey	4	2	2	
Haldimand	2	1	1	
Hastings	8		8	
Huron	14	1	12	1
Kent	2	2		
Lambton	5	1	3	1
Lanark	2	2		
Leeds and Grenville	3	2		1
Lennox and Addington	2	1		1
Lincoln	1	1		
Middlesex	12	11	1	
Norfolk	5	2	3	
Northumberland and Durham	13		13	
Ontario	1	1		
Oxford	2	2		
Peel	3	2	1	
Perth	5	4		1
Peterboro'	1	1		
Prince Edward	0			
Prescott and Russell	1	1		
Carried forward				

Table, shewing the number of deaf mutes that were in the Institution.—*Continued.*

Total number of Deaf Mutes in the Institution on the 3th Sept., and the Counties from which they were received.	Total No.	SHOWING HOW THEY WERE SUPPORTED.		
		Supported by Parents or Guardians.	Supported by Municipalities.	By the Province as Orphans.
Brought forward				
Simcoe	4	2	2	
Wellington	4	1	3	
Welland	3	1	1	1
Wentworth	3	3		
Waterloo	1	1		
York	4		4	
City of Toronto	3	2		1
City of Hamilton	1			1
City of London	1	1		
City of Kingston	1	1		
New Brunswick	1	1		
	131	63	58	10

As the organization of the classes and the classification of the pupils are considerably delayed and obstructed by the reception of pupils after the formal opening of the session, the Principal was instructed to issue a circular informing parents of deaf-mutes, and others interested, that after the present session the provision of the by-laws requiring all pupils to be in attendance at the opening of the term would be enforced.

Many complaints were received from parents of the alleged injustice done to them in reducing the rate of board to pupils supported by municipalities to one dollar a week while the rate to them was kept at one dollar and a half. As the question is now submitted for the decision of Government it is unnecessary to refer to the matter, except to say that the discrimination in favour of municipalities, without first coming to a well defined understanding with them as to what deaf-mutes they should send to the Institution and support while there, is unjust to many poor parents who, in the exercise of a very commendable spirit of independence, refuse to ask for municipal aid.

Domestic.

Owing to the very insufficient kitchen and store-room space afforded under the original arrangement of the building, an appropriation was asked last year for alterations and additions.

These have now been completed and a first-class cooking range has been substituted for the cooking stove, which now renders these departments as complete as it is possible to have them, in consequence of which the utmost regularity and order prevails in the domestic management.

The meals of the pupils are served in a neat way and very promptly, and the tables, at all my visits, had an abundant supply of good, wholesome fare.

At each of my inspections I saw every pupil in attendance, and received from the Principal information and particulars respecting every case requiring attention. The appearance of the pupils furnished good evidence that their wants and requirements were being well attended to; and that the health of the inmates was good.

The additional work caused by the large increase in the number of the female pupils, and the desirability of placing the younger boys, while in dormitory, in charge of a competent person, necessitated the appointment of a house-keeper at the opening of the present session: who also supervises the kitchen and dining-room.

Various articles of furniture and furnishings were authorized to be purchased upon the requisitions being presented to me at my inspections.

State of the Buildings.

In addition to the alterations and repairs to the kitchen an appropriation was made for papering and decorating the rooms in the centre building. This work was completed during the vacation, and has very much improved the appearance of the Institution. An additional sum of six hundred dollars is asked this year to continue this work, and to paint and grain certain rooms.

The bad quality of flooring used throughout the entire building will render it necessary to have a considerable portion of it renewed at an early day. I would recommend that the class-rooms, lower-halls, and dining-rooms be relaid this season with the best quality of well seasoned oak flooring not over four inches wide.

Owing to the great amount of window surface in the Institution and its exposed position it will be necessary, in the interests of economy as well as comfort, to place inside blinds on all the front windows of the building. Notwithstanding the alterations to the eaves of the building, water still comes through, and damages the walls and ceilings. The principle adopted in their construction is very faulty and will continue to cause trouble until a better is adopted.

The ward-robe conveniences of the Institution are very deficient, and it will be necessary to construct a range of closets and drawers in one of the attic dormitories, so that each of the pupils in the Institution may have a lock-up for his or her exclusive use.

As the lavatory appliances were not quite sufficient on the girls' side of the house, the Principal was instructed to purchase a few closed wash-stands for the elder pupils.

In addition to the chemical engines kept in the corridors of the Institution, which in my opinion would subdue any fire that might break out *within* the building, if a proper guard is kept to have them in use at a moment's notice, I represented to the Honourable the Commissioner of Public Works the necessity of providing outside protection. Hydrants, connecting with the pumping engine were immediately placed in close proximity to the building at various points on the grounds, which, I think, renders the fire protection effective. But it will be necessary to provide an additional engine at the bay in order to obtain sufficient force, as well as to guard against accidents to the present one.

The outside closets, which are built on the ordinary vault system, are quite unsuited for an Institution of this size. What with freezing in winter and the bad odour in summer the sooner the dry earth system or water sewage is introduced the better.

The work-shop and houses recommended to be built in my last report, and for which an appropriation was made by Parliament last session, are now approaching completion, and will be ready for occupation this winter. But before they can be occupied various additions will require to be made to the dwellings, which are very small and badly arranged. The work-shop should also be furnished with a tank of sufficient capacity to hold at least one thousand gallons of water, both for fire protection and ordinary uses. An appropriation will also be required to furnish the necessary machinery, fixtures, and appliances for the work-shop, a statement of which has been forwarded to the Hon. Commissioner of Public Works.

Additional Buildings.

The want of a gymnasium and play-rooms is now beginning to be very much felt; at present, out-door amusements and exercise alone can be indulged in, and on rainy days the pupils are confined to the class-rooms and other parts of the main building, which adds very considerably to the tear and wear upon the building and furniture, and very much restricts healthful exercise and amusement. To overcome this I would most respectfully recommend that a building containing a gymnasium, play-rooms, and reading-room, with space in the upper story for additional dormitories, be erected. The dormitories need not be finished internally until required.

The distance of the Institution from the town of Belleville renders it exceedingly desirable that houses should be built for the teachers upon the Institution grounds, for the occupation of which they would willingly pay a sum equal to seven per cent. of the capital outlay. I would, therefore, recommend that one double semi detached house, and one good sized single cottage, with all the external requirements of ordinary houses be

constructed for the teachers of the Institution. Additional barn space is also required as well as a good root-house.

I would, therefore, most respectfully recommend to the favourable consideration of the Honourable the Commissioner of Public Works that an appropriation be asked from the Legislature for the construction of these new buildings, and for the alterations and additions recommended in a previous part of this Report.

Receipts and Expenditures.

The accounts of the year are herewith presented, shewing the expenditure for the twelve months to have been $24,895 55, and the receipts from the payment of the board of pupils and all other sources of revenue $3,233.76.

These figures show that the entire cost of educating, boarding and lodging each pupil in the Institution for the term of ten months was $198.70.

If, however, we deduct from the total expenditure the amount received for board and articles sold, we find that the actual cost of each pupil to the Province, per session of ten months, to be $173.29.

A comparison of these figures with those of similar establishments elsewhere is very favourable to the Ontario Institution.

A statement of the estimated expenditure for the year 1873 is herewith appended, showing that the sum of $29,126.00 is required for the ensuing year.

It gives me pleasure again to bear witness to the faithful and efficient manner in which the Principal, officers, and teachers of this Institution have discharged their duty.

Statement of Expenditure of the Ontario Institution for the Deaf and Dumb, from the 1st October, 1871, to 31st September, 1872.

Medicine and medical comforts	$106 01	
Medical attendance	215 25	
		$321 26
Household expenses:—		
Butcher's meat	1,944 13	
Butter and cheese	1,213 45	
Flour	1,229 97	
Barley-meal, &c	76 31	
Eggs	113 95	
Fruit	215 26	
Fish and Fowls	234 12	
Salt, pepper, mustard, &c	52 25	
Sugar and syrup	646 22	
Tea and coffee	537 62	
Groceries, assorted	164 01	
Potatoes and vegetables	181 26	
		6,608 55
Bedding, clothing and furnishing:—		
Bedding and furnishing	156 76	
Clothing and shoes	400 26	
Furniture and tools	652 56	
Crockery and glass-ware	13 35	
		1,222 93
Fuel, gas, and oil:—		
Fuel	2,502 44	
Gas, oil, candles, matches, &c	607 90	
		3,110 34
Carried forward		$11,263 08

Brought forward		$11,263 08
Cleaning :—		
Brooms, brushes, blacking, &c.	$40 27	
Soap and laundry	262 92	
Cleaning and white-washing	86 75	
		389 94
Books, stationery, printing, &c. :—		
Advertising and printing	63 73	
Stationery	151 24	
Postage, express, &c.	213 02	
School-books and apparatus	195 94	
Library	53 15	
		677 08
Farm and stable :—		
Feed and fodder	457 91	
Farm implements, carriages and drainage	288 24	
		746 15
Buildings and grounds :—		
Repairs and internal ornamentation	463 73	
Construction	190 00	
Ornamentation	132 85	
		786 58
Sundries	88 99	
Incidentals	122 75	
Amusements	59 00	
Officers' travelling expenses	54 48	
Salaries and wages	10,707 50	
		11,032 72
		$24,895 55

ESTIMATE of amount required for the expenditure of the Ontario Institution for the Deaf and Dumb, for the year commencing 1st of January, and ending 31st of December, 1873 :

Medicines and medical comforts		$100 00
Household Expenses :		
Butchers' meat	$2,400 00	
Butter and cheese	1,550 00	
Flour	1,800 00	
Barley, meal, &c.	100 00	
Eggs	60 00	
Fruit	200 00	
Fish and fowls	150 00	
Salt, pepper, mustard, &c.	80 00	
Sugar and syrup	750 00	
Tea and coffee	550 00	
Groceries, assorted	300 00	
Potatoes and vegetables	200 00	
		8,140 00
Carried forward		$8,240 00

Brought forward			$8,240 00
Bedding, Clothing and Furnishing:			
Beds and bedding		$600 00	
Clothing and shoes		400 00	
Furniture and furnishing		600 00	
Crockery and glassware		30 00	
			1,630 00
Fuel, Gas and Oil:			
Fuel		2,500 00	
Gas, oil, candles, matches, &c.		750 00	
			3,250 00
Cleaning:—			
Brooms, brushes, blacking, &c.		50 00	
Soap and laundry		250 00	
Cleaning		100 00	
			400 00
Books, Stationery, Printing, &c.:			
Advertising, printing and stationery		200 00	
Postage, express, &c.		200 00	
Books and apparatus		400 00	
			800 00
Feed and fodder			300 00
Farm implements, drainage and ornamentation			400 00
Repairs and internal ornamentation			400 00
Amusements			200 00
Officers, orphans and pupils' travelling expenses			300 00
Incidentals			500 00
			16,420 00
Salaries and Wages:	No. of officers and employees.		
Principal	1	1,600 00	
Physician	1	500 00	
Book-keeper and steward	1	800 00	
Matron	1	300 00	
Teachers	8	5,000 00	
Visitors' attendant	1	180 00	
Housekeeper	1	200 00	
Engineer	1	600 00	
Farmer	1	350 00	
Gardener	1	240 00	
Fireman	1	180 00	
Night watchman	1	216 00	
Carpenter and assistant carpenter	2	650 00	
Trade instructor for new shops	1	600 00	
Farm hand and teamster	1	168 00	
Messenger	1	96 00	
Cook and baker	2	450 00	
Six maids	6	504 00	
Gate keeper	1	72 00	
	33		12,706 00
			$29,126 00

ONTARIO INSTITUTION

FOR THE

EDUCATION OF THE BLIND.

A Principal having been appointed to this Institution on the 2nd day of January, he was directed to visit the Institutions for the Education of the Blind at Batavia, Philadelphia, New York and Boston, for the purpose of informing himself respecting the system of instruction pursued in these institutions, and the style of type, class books, maps and apparatus in use. He was also instructed to obtain information relative to the mode of awarding admission to such establishments, and the rules and regulations that obtained in them, with respect to the literary and domestic management, as well as generally to inform himself upon all matters relating to such Institutions.

The result of Dr. Wiggins' visit, as well as of my own, made some time previous, to some of the establishments named and others, is embodied in the following Report addressed to the Honourable the Provincial Secretary, dated 11th March 1872 :—

"I have the honour to report for the information of His Excellency the Lieutenant-Governor, that with a view to the adoption of the best and most highly esteemed system of instruction at the Ontario Institution for the Blind, Brantford, as well as for the introduction into the several departments of the most approved apparatus and appliances, I some time ago visited a few of the United States Institutes in order to obtain general information upon the subject. For the same purpose, on the appointment of Mr. Wiggins to the position of Principal, I instructed him to visit four establishments having the highest literary reputation in the United States. The result of these visits may be briefly stated as follows :—

"1st. There are several classes of raised type used in the United States in the Education of the Blind, respecting which very considerable diversity of opinion prevails, each class having its advocates and each its detractors. It is, however, very apparent to a critical examiner (and in fact it was generally admitted by all teachers that I had conversation with) that as yet the art of printing has been of little practical benefit to the blind, oral instruction being mainly pursued in their education. The books produced in raised type are comparatively few, very clumsy and voluminous, and exceedingly expensive.

"The attention of Principals of Institutions, and Instructors of the Blind is now being directed to this most serious obstacle to the proper education of this class, and doubtless before many years transpire important changes and improvements will be made.

"The three classes of line or letter type now in use in the United States are known as follows :—

"1st. The Boston or lower case, which is the small Roman letter without capitals, in which the Bible and a considerable number of books are printed.

"2nd. The Philadelphia, or Glasgow type, which consists entirely of the Roman capitals, in which an abridgement of the "Worcester Dictionary" is printed, and other books; and

"3rd. The Kneass type which, with a few modifications, is a combination of the Boston and Philadelphia, with small and capital letters combined as in ordinary reading.

"I am of opinion that the last named system, the "Kneass type," is the best, inasmuch as when a blind person once acquires a knowledge of it he can with very little effort also read the Boston and Philadelphia type. In addition to which it also gives the blind a greater amount of reading matter than any other system.

"The 'Moon type,' very commonly used in England, is almost entirely composed of arbitrary characters, and is not only more difficult to master, but requires teachers specially trained to impart instruction, and therefore tends to alienate the blind from ordinary seeing persons by rendering them dependent upon skilled teachers for instruction. Apart from this objection I am of opinion that the system of education in this Province should assimilate itself as much as possible to that in existence in the United States, if for no other reason than that the blind of Ontario will come more in contact with those of the neighbouring country than any other. I would therefore recommend that the 'Kneass' type be introduced into the school series of the Ontario Institution.

"I would recommend that the teaching staff of the Institution be at first composed of one skilled female teacher, one ordinary male teacher and one ordinary female teacher, the two last named to have first class certificates.

"I would further recommend the purchase of the books, apparatus and appliances, enumerated in the annexed list, all of which is respectfully submitted."

The recommendations contained in the above report having received the approval of Government, teachers were engaged and arrangements completed for opening the Institution.

Under the specifications the buildings were to have been completed on the 1st day of November, 1871, but owing to the failure of the contractors, necessitating the preparation of new specifications and their submission to the public for tenders for the completion of that portion of the work left undone, the date of completion was extended to 1st. April, 1872. Circulars were accordingly issued to the clerks of all municipalities, advising them that the Institution would be opened for the admission of pupils on 16th April, but owing to another series of delays on the part of the new contractor this did not take place until the 1st of May, and even then under the most adverse circumstances. Workmen were engaged in every part of the building from the day of opening until the vacation. The opening of the Institution under these circumstances was a serious mistake, inasmuch as neither order nor discipline could be introduced into the administration of its affairs. Even with ordinary seeing children the presence of workmen in an incomplete building would have been bad enough, but in the case of the blind their care was a constant cause of anxiety. The Principal was therefore instructed to discourage pupils being sent forward until the opening of the fall session. For this reason only eleven pupils were on the roll for the broken term commencing the 1st May, and ending the 26th of June.

Of this number six were pupils whose board was paid by parents, two by Councils, and three were boarded, clothed and educated as orphans at the expense of the Government.

In order to obtain accurate information relative to blind youths of school-age in the Province, their number, the circumstances of their parents, and the causes which were likely to keep them from the Institution, I instructed the Principal to visit as many of them as he could reach during the vacation. The number of youths of the proper school-age has not yet been ascertained, but from all the information that can be obtained it does not exceed one hundred.

It would appear, however, that the parents of over three-fourths of these blind youths are in very poor circumstances, and, unless they receive assistance from some source, will be quite unable to pay even forty dollars a session for the board of their children while being educated at the Institution. In this respect the inability of the parents is even greater and more marked than with those of deaf mutes. Consequently the necessity for Legislative action in the direction indicated in the report on the Institution for the Deaf and Dumb is more imperative. I would therefore recommend that the Institution be made free to all blind youths of school age in the Province, except those whose parents are able to pay for their board.

The Autumn Session of the Institution opened on the 4th of September. The following table shews the number of pupils up to the 30th of September who had entered, the counties from which they came, and how they are supported in respect of payment of board.

Name of Counties.	Number of Pupils from each County.	Supported by Parents or Guardians.	Supported by Municipalities.	By the Province as Orphans.
Brant	4	1	1	2
Bruce	1			1
Frontenac	3	1	1	1
Huron	1		1	
Halton	1	1		
York	7	2	4	1
Simcoe	1		1	
Prince Edward	1	1		
Lincoln	1		1	
Durham	1	1		
Perth	3	1	2	
Middlesex	3		1	2
Glengarry	1		1	
Norfolk	1		1	
Wellington	2	1	1	
Wentworth	2		1	1
Ontario	1	1		
Montreal	1	1		
	35	11	16	8

This summary shews that of the 35 pupils in the Institution on the 30th September 11 were supported by parents, 16 by municipalities, and 8 by the Province as orphans.

A great number of applications have been received for the admission of young men and women between the ages of twenty-one and thirty. The following general principles were laid down as constituting a reason for suspending the rule respecting admission over the specified school-age :—

1st. In the case of a blind youth a little over age, whose education has been entirely neglected.

2nd. Where education had been commenced, but for some reason suspended before a fair state of proficiency had been attained.

3rd. When a young blind person gives indication of possessing considerable musical ability, which by instruction would enable him or her to earn a livelihood.

Three statutory inspections were made of this Institution during the year, the first, which took place on the 18th and 19th of April, was chiefly for the purpose of completing the furnishing of the building, allocating the rooms for educational and domestic purposes, and for the occupation of the officers and teachers ; the engagement of teachers, and for the general organizing of the establishment. In order that the last named object might be properly accomplished the following by-laws, defining the design of the Institution and the method and terms of admission to it, and the duties of its officers, teachers, and servants, received the assent of His Excellency the Lieutenant-Governor, on the 30th May, 1872, and were at once placed in force.

In conformity with the provisions of the "Prison and Asylum Inspection Act, 1868," the Inspector of Asylums, Prisons, &c., with the assent of His Excellency the Lieutenant-Governor, enacts as follows :—

DESIGN OF INSTITUTION.

1. The Institution is founded for the purpose of educating, as well as imparting instruction in some professional or manual art to such blind persons residing in the Province of Ontario, as are hereafter described, and is not intended as an Asylum for the aged and

infirm, or a Hospital for the treatment of disease, but in its design has reference only to the physical, mental and moral training of blind youths of both sexes.

ADMISSION AND DISCHARGE OF PUPILS.

2. All blind youths of both sexes, between the ages of eight and twenty-one, not being deficient in intellect, and free from contagious disease, being residents of the Province of Ontario, may be admitted into the Institution.

3. The period of education and instruction for any pupil shall be determined by the Principal, subject to the approval of the Inspector, but shall not exceed seven years, and no pupil shall remain in the Institution in any case for a longer period, unless under special circumstances, and discretionary power in this respect shall be vested in the Inspector and Principal.

4. The regular annual school session shall commence on the first Wednesday in September in each year, and continue till the last Wednesday in June. Applications for admission must be made in good time to ensure the pupil's reception at the commencement of the session.

5. Education, as well as instruction in such mechanical employments as may be taught in the Institution, including books, stationery, maps, and all school appliances, together with bed, bedding, towels, and general maintenance (excepting only wearing apparel and food) to be *free to all youths*, specified in Section two of this By-law.

6. Parents, guardians, or friends who are unable to pay for the board of pupils, may apply to the councils of the county, township, city, town, or incorporated village in which they reside, and the clerk of the municipality shall make application to the Principal for the admission of such pupils into the Institution; when, subject to the provision contained in section two, admission will be awarded on the municipality becoming responsible for board at the rate of one dollar per week during the school session. The whole question as to the inability of the applicants to pay to be determined by such municipality, without reference to the Government or the officers of the Institution.

7. Parents, guardians, or friends who are able to pay for the board of pupils, will be charged one dollar and fifty cents per week during the school session, and application for the admission of such pupils will be made direct to the Principal.

8. One-half of the cost of board for each session must be paid in advance, and the balance before the close of the session, and no deduction will be made in consequence of absence or any other cause except sickness.

9. Indigent orphans to be boarded, clothed and educated at the expense of the Government, on the application for admission of the Municipal Corporation in which the orphan resides, with the certificate of the Warden, Reeve or Mayor, and the County Judge attached. Travelling expenses of such pupils, to and from the Institution, to be defrayed by such municipality.

10. It is required that the pupils sent to the Institution shall be decently and comfortably clothed, and furnished with a sufficient change and variety of apparel to ensure cleanliness and comfort. The name of the boy or girl must be written on each article with permanent marking ink.

11. The vacation will commence on the last Wednesday in June and end on the first Wednesday in September, during which time every pupil must be removed to his or her home, or place of abode.

12. All travelling expenses of pupils to or from the Institution, whether at vacation, or in consequence of serious sickness, must be defrayed by the parent, guardian, friend or municipality sending such pupil

13. It is further required that, in case of serious sickness, death, misconduct, or deficiency in intellect, the pupil shall at once be removed from the Institution.

14. Before any pupil is received into the Institution, the following form of application must be filled up.

FORM OF APPLICATION.

To the Principal of the Ontario Institute for the Blind, Brantford.

The undersigned, desiring to obtain admission into the Institution for of the of in the County of would submit

for your consideration the following particulars in answer to the several interrogations herein propounded, viz. :—

	Answer.
(1.) What is *real* and full name of the person for whom admission is asked ?	
(2.) What are the names of his or her parents ?	
(3.) What is the place of residence of the parents ? Give the name of the city, town, village or township, and county in which they reside in full.	
(4.) What is the occupation of the parents ?	
(5.) What is the date of birth of the person for whom application is made ?	
(6.) At what age did the blindness occur ?	
(7.) What is the supposed cause of blindness ?	
(8.) Is the blindness total or only partial ?	
(9.) If only partial does it prevent the person from being educated in a school for the seeing ?	
(10.) Is the person for whom application is made of sound mind, and susceptible of intellectual culture ?	
(11.) Is he or she free from immoral habits ?	
(12.) Has he or she any bodily deformity, infirmity, or defect other than blindness, if so, what ?	
(13.) Is he or she free from epilepsy and all infectious diseases ?	
(14.) What is his or her general state of health ?	
(15.) Has he or she ever been a pupil in any other school for the blind, if so, when and how long ?	
(16.) Has he or she ever been a pupil of a school for the seeing ?	
(17.) Were his or her parents related before marriage ? If so, how ?	
(18.) Are there any other cases of blindness in the family, and if so, how are the persons so affected related to the person for whom application is made ?	
(19.) What are the pecuniary circumstances of the parents, relatives, or guardians of the person for whom application is made ?	

_____ *(Name of Applicant.)*

OFFICERS.

15. The staff of the Institution shall consist of the following officers:—A Principal, Physician, Bursar, Matron and Teachers.

DUTIES OF PRINCIPAL.

16. The Principal shall be the chief officer of the Institution, and shall, with his family, reside in the Institution.

(2.) He shall, with the approval of the Inspector, prescribe the course and method of instruction and training in the several departments, the time to be devoted by teachers

and pupils to the different occupations, studies and exercises, the system of discipline, and shall generally superintend and direct the intellectual, moral, religious and mechanical instruction of the pupils, as well as taking special charge of a class in the teaching department.

(3.) He shall have charge of the internal economy of the Institution, and shall enforce neatness, order, and regularity in all its departments. He shall frequently visit the dormitories and dining-rooms, and see that the building is properly warmed and ventilated, and that the meals are regularly and promptly served, and the food furnished is wholesome and sufficient.

(4.) He shall communicate from time to time to the Inspector, such information as he may think important and necessary, and shall make quarterly reports to the Inspector upon the educational condition of the Institute, as well as the general administration of its affairs.

(5.) No subordinate officer shall interfere with the directions of the Principal to the pupils. They shall report to him any neglect or act of disobedience, and it shall be the duty of the Principal to see that the pupils conform to the rules and regulations of the Institution, and respect and obey the teachers and other officers.

(6.) Complaints of grievances on the part of subordinate officers, servants or pupils, shall be made to the Principal, and, if not redressed, application in writing shall be made to the Inspector; and any difficulties that may arise between officers shall be promptly reported to the Principal who shall, if necessary, refer the same to the Inspector.

(7.) He shall keep a register of the names and ages of the pupils, their parents or guardians, residence and date of admission and discharge of each of the pupils, and such other statistical information as the Inspector may prescribe, together with a history, as far as practicable, of the cause and duration of his or her infirmity.

(8.) He shall make frequent daily visits to the several class rooms and work-shops during the hours of instruction, for the purpose of keeping himself informed as to the progress and deportment of the pupils, and of making such suggestions to the teachers and trade instructors as he may deem useful; and shall at the end of each session, or oftener if required, report each pupil's progress to their parents or friends, and preserve a record of the same.

(9.) He shall keep a journal of all important events occurring in the Institution and submit the same to the Inspector at his visits of Inspection.

(10.) He shall make an annual report to the Inspector, embracing an account of the condition and progress of the several departments of the Institution, of the course of Instruction pursued, and of the health and general improvement of the pupils, with suggestions for the advancement ot the objects of the Institution.

DUTIES OF PHYSICIAN.

17. It shall be the duty of the Physician to examine every pupil upon reception, and to inform himself of the health of such pupil, so as to guard against the introduction of contagious diseases.

(2.) He shall visit the Institution every day in his professional capacity, and shall have the general care of the health of the pupils. He shall also attend the officers and servants of the Institution, together with their families.

(3.) He shall frequently visit the several departments of the Institution, and shall notify the Principal, for the information of the Inspector, of any defective sanitary arrangements, whether in respect to drainage, ventilation, insufficiency of clothing or bedding, the quality of the provisions, or any other defect which, in his opinion, may prejudice the health of the pupils.

(4.) He shall keep a record, in a book to be opened for that purpose, of all the pupils, officers and others whom he may visit in the Institution in his professional capacity, giving the dates of such visit, the nature of the disease or ailment, and the prescription made by him.

(5.) He shall make, annually or oftener if required, a report to the Inspector of the sanitary condition of the Institution, with such recommendations as he may deem necessary for the preservation of the health of the pupils.

DUTIES OF BURSAR.

18. The Bursar shall keep an inventory of all the furniture, household goods, farm stock, implements and chattels of the Institution, and of the additions made thereto, from time to time, in a book to be kept for that purpose, and shall report to the Inspector such things as may be required, and shall take care that any articles of whatever description, in his charge, when worn out or rendered unfit for use, are returned into store and duly accounted for.

(2.) He shall keep exact accounts of all receipts and expenditure in the books of the Institution in the manner prescribed by the Inspector, and shall prepare monthly statements of such receipts and expenditures, with all accounts and vouchers, and shall forward the same to the Treasurer of the Province, or such official as the Treasurer shall direct for settlement.

(3.) He shall see that the farm, garden and grounds are well and neatly kept, and shall have general charge of the same.

(4.) He shall see that the buildings, including the barns, stables, and other outhouses, as well as the fences, are kept in a good state of repair. He shall also have charge of vehicles and farm implements and stock, and it shall be his duty to see that all the live stock is properly fed and taken care of.

(5.) He shall superintend and direct the employees engaged at work on the farm or garden, or any other part of the grounds, and shall act in accordance with the directions and advice of the Inspector.

(6.) The Bursar shall also act as accountant and storekeeper, and, under the direction of the Inspector, shall purchase and keep all the stores and supplies (other than books and educational appliances and apparatus, which shall be purchased and be under the charge of the Principal), and shall issue the same upon requisition in accordance with a prescribed form.

(7.) In addition to the several duties specified in the preceding sections the Steward shall at all times perform such additional services as the Inspector may prescribe.

DUTIES OF MATRON.

19. The Matron shall have charge of the blind girls out of school hours.

(2.) She shall see that the girls are judiciously secluded from the society of the male pupils; that they are industriously employed during the hours appropriated to labour, that they may make, as far as practicable, the garments for the pupils clothed by the Institution, as well as the sewing and mending for the Institution, giving them such Instruction and assistance as may be necessary.

(3.) She shall see that the girls take sufficient exercise, and shall pay particular attention to the cleanliness of their persons and clothing.

(4.) She shall see that the sleeping and sitting rooms of the girls are kept in proper order.

(5.) At the ringing of the bell for meals, she shall see that all the girls proceed punctually and orderly to the dining room, and shall be present with them, and have special care of their deportment during their meals.

(6.) During the hours of work she shall not permit any person to be in the rooms of the girls without permission of the Principal.

(7.) She shall see that all the girls retire at the ringing of the bell, and the fires and lights in their apartment are made secure for the night.

(8.) She shall report to the Principal every violation of the rules that may come under her observation, giving the name of the pupil violating the rule, and the time when it was done.

(9.) She shall enter in a book the articles of clothing belonging to each pupil, and see that the same are carefully preserved; she shall make a requisition on the Bursar in writing for all articles of bedding, linen, napiery, as well as clothing for orphans, and such furnishings as may be required from time to time, and shall carefully preserve all the clothing materials, &c, that may be placed in her care.

(10.) She shall, every Monday morning, record in a book a list of the articles sent to

the laundry from her department, and on their return shall compare them with the list, and report to the Bursar in writing each Saturday night any missing article.

(11.) She shall keep an inventory of beds, sheets, blankets, counterpanes, pillow-cases, towels, and all other articles belonging to her department, and for which she will be held responsible.

(12.) Until the services of a housekeeper are required, the Matron shall also have the oversight of the kitchen and dining-room, and shall receive from the Steward upon requisition all the provisions to be prepared for meals, and she shall see that such provisions are economically used, and after every meal carefully put away. She shall have charge of the laundry, and see that the articles sent in are properly and promptly washed, and that the kitchen and laundry are kept in order.

(13.) She shall at all times consult with the Principal as to the proper performance of her duties specified in sub-sections 2 to 8 inclusive, and with the Bursar respecting the duties specified in sub-sections 9 to 12 inclusive.

TEACHERS.

20. The Teachers shall instruct the pupils, under the direction of the Principal, and perform such duties as he, with the approval of the Inspector may require of them. They shall in no case absent themselves from their duties without the consent of the Principal or Inspector.

(2.) They shall at all times exercise a proper supervision of the pupils, and see that they violate none of the rules.

(3.) Their treatment of the pupils shall be uniformly gentle and kind. No teacher or subordinate officer shall administer corporal punishment, but shall report extreme cases of disobedience to the Principal.

(4.) Teachers shall note any absence from or irregularity in their classes, and report the same to the Principal.

(5.) The senior teacher shall, in the absence of the Principal, take charge of the educational department, and fully carry out the instructions of the Principal.

J. W. Langmuir,
Inspector.

Office Inspector, Asylums, Prisons, &c.,
Ontario, 15th April, 1872.

Assented to by His Excellency, 30th May, 1872.

J. G. Scott,
Clerk of the Executive Council.

At my visit in May, the School had been in operation for nearly a month, but owing to the unfinished condition of the building its general management was attended with great difficulty. Several defects and deficiencies in the internal arrangement of the building were brought to the notice of the Honourable the Commissioner of Public Works, and orders were at once given to have the necessary alterations and additions made to remedy them.

When I visited the Institution again in September a very marked improvement had taken place. The entire building was found in excellent order, with thorough cleanliness and neatness prevailing in every department. The pupils' dormitories were in a very orderly state, the bedding clean, and sufficient for the requirements of the season.

The kitchen and the other domestic departments did not give evidence of being well managed and suggestions for improvement were made.

There were at the time of my visit 33 pupils in residence, viz. 20 boys and 13 girls.

The examination of several classes in reading, geography, mental arithmetic and other lessons was very satisfactory. The system of imparting instruction appeared to be very efficient, and well calculated to accomplish the objects aimed at. The discipline of the class-rooms, and the general order that prevailed in the educational departments were all

that could be desired. As a better grading of the pupils, in some of the classes, appeared to be desirable the Principal was instructed to open a third class. To enable this to be done the Bursar was authorised to place desks and seats and otherwise to prepare a third class room in the buildings.

Now that the work-shops are completed, I would again repeat the recommendation contained in last year's report that, while it is important that the Institute for the Blind should be established and organized as an educational establishment, *and not as an Asylum for adult blind persons* or an Hospital for the treatment of disease, still there are a class of blind people, who have already been educated, that might be greatly benefited by a course of mechanical instruction in its work-shops, and in carrying out which no violence would be done to the educational character of the Institution, but which, in fact, would be quite in keeping with the object of its foundation. The lot of the blind is naturally one of the greatest dependence, and in the training of blind youths, it appears to me to be of vital importance that the course or method of instruction should be of an eminently practical character, not only that the evils of their dependent position may be mitigated as much as possible, but that they may be fitted to turn such instruction as is given to them in the Institute to direct benefit, by enabling them to earn a living for themselves. For this reason I would strongly recommend that educated blind youths, in certain cases, be allowed to reside in the Institution for periods to be afterwards determined, for the purpose of receiving instruction in the mechanical department.

I would respectfully recommend for the consideration of the Honourable the Commissioner of Public Works that an appropriation be asked from the Legislature to enable the following works connected with this Institution to be proceeded with :—

1st. The erection of three houses upon the Institution grounds for such of the officers and employees as should live in close proximity to the establishment.

2nd. Sheds for coal and wood, and for waggons, farm implements, &c.

3rd. To furnish the work-shops with the machinery and appliances necessary to carry on the trades of basket, willow-ware and broommaking.

4th. To complete the ornamentation, planting and road-making upon the Institution grounds.

4th. To complete the furnishing of the Institution in respect of educational appliances and apparatus, additional furniture and furnishings, and for papering, painting and graining in the main building of the Institution.

The accounts of the Institution from the time it was opened, on 1st May, until the end of the official year, 30th September, a period of five months, are herewith appended, showing the entire expenditure to be $7,522.52.

The receipts for the board of pupils for the same period amounts to $360.50 which, when deducted from the gross expenditure, it is shown that the actual cost to the Province for maintaining the Institution for the period stated was $7,161.72.

ESTIMATE of amount required for the expenditure of the Ontario Institution for the Blind, for the year commencing 1st January and ending 31st December, 1873 :—

Medicine and medical comforts		$40 00
Household expenses :—		
Butcher's meat	$1,400 00	
Butter and cheese	600 00	
Flour	800 00	
Barley-meal, &c.	100 00	
Eggs	40 00	
Fruit	100 00	
Fish and fowls	100 00	
Salt, pepper, mustard, &c.	100 00	
Sugar and syrup	300 00	
Tea and coffee	300 00	
Groceries, assorted	200 00	
Potatoes and vegetables	360 00	
		$4,340 00

Bedding, clothing and furnishing:—			
Beds and bedding		$400 00	
Clothing and shoes		200 00	
Furniture and furnishing		300 00	
Crockery and glass-ware		100 00	
			$1,000 00
Fuel, gas, and oil:—			
Fuel		2,400 00	
Gas, oil, candles. matches, &c		600 00	
			3,000 00
Cleaning:—			
Brooms, brushes, blacking, &c		50 00	
Soap and laundry		150 00	
Cleaning		100 00	
			300 00
Books, stationery, printing, &c.:—			
Advertising, printing and stationery		200 00	
Postage, express, &c		150 00	
Books and apparatus		250 00	
			600 00
Farm and stable:—			
Feed and fodder		600 00	
Farm implements, drainage, and ornamentation		200 00	
Repairs and internal ornamentation		200 00	
Amusements		100 00	
Travelling expenses of officers, &c		200 00	
Incidentals		300 00	
			1,600 00
Salaries and Wages:	No. of officers and employees.		
Principal	1	1,000 00	
Bursar	1	800 00	
Physician	1	300 00	
Matron	1	300 00	
Teachers	4	2,200 00	
Professor of music	1	900 00	
Engineer	1	600 00	
Fireman	1	180 00	
Teamster and farm hand	2	600 00	
Messenger	1	144 00	
Gardener	1	400 00	
Cook	1	144 00	
Visitors attendant	1	120 00	
Assistant ditto	1	96 00	
Laundress and maids	7	720 00	
			8,504 00
			$19,384 00

EXPENDITURE of the Ontario Institution for the Blind from its opening on 1st May, until the 30th September, 1872.

Medecines and medical comforts		$178 47
Household expenses:—		
Butchers meat	$245 22	
Butter	72 30	
Flour and bread	106 39	

Eggs	$12 75	
Fruit	15 74	
Fish	15 54	
Sugar and syrup	145 04	
Tea and coffee	249 87	
Groceries assorted	67 75	
Potatoes and vegetables	34 58	
		$965 18
Bedding and clothing :—		
Bedding	8 40	
Clothing	26 55	
Furniture and furnishing	521 12	
Crockery and glassware	106 67	
		662 74
Fuel, gas and oil :—		
Fuel	207 36	
Gas and oil	59 80	
		267 16
Cleaning :—		
Laundry and cleaning		131 70
Books, stationery, printing, &c. :—		
Stationery	265 31	
Books and apparati	437 01	
Postage and telegraph	78 69	
		781 01
Farm and Stable :—		
Feed and fodder	98 65	
Farm, stable and stock	286 43	
Farm implements	56 90	
		441 98
Buildings and grounds :—		
Ornamentation	94 68	
Incidentals	325 43	
Willow plantation	24 75	
Travelling expenses, &c.	436 10	
Salaries and wages	3,213 32	
		4,094 28
		$7,522 52

Hospitals and Charitable Institutions.

Having been instructed by Government to examine fully into the method of granting Legislative aid to Hospitals and Benevolent Institutions, the accompanying report, which was transmitted to the Provincial Secretary on the 18th of July, embodies the result of my examination into the subject. Certain defects and anomalies in the system ; as well as irregularities in the administration of the affairs of some of the establishments in receipt of Government aid are pointed out, as having come under my observation during the past five years.

Assuming that it is desirable and expedient to assist, with Provincial funds, certain benevolent Institutions, it becomes of the utmost importance to determine what class of Institutions are entitled to aid, and to what extent, and upon what principle such aid shall be granted.

I think it will generally be admitted, that the best means of determining whether a charitable institution is entitled to aid, is by an examination into its design and the character of the work it is endeavouring to accomplish. If the objects aimed at in its establishment and maintenance are calculated to benefit the Province at large, and if its affairs are conducted in such a manner as to accomplish the objects, it may very properly be assumed that such an Institution has a good claim upon the Province for aid.

Applying this test to the Institutions aided by Provincial funds for the year, 1871, we find :

1st. That there were ten Hospitals, or Institutions of a curative character for the treatment of disease or bodily ailment.

2nd. Two Houses of Industry or what may more properly be termed Poor-houses for the lodgement of indigent persons, chiefly adults, and for dispensing charity in a systematic manner.

3rd. Eleven Institutions for the lodgement, support and education of indigent orphans and neglected and abandoned children.

4th. An Institution of a reformatory character, known as a Magdalen Asylum, for the sheltering and re-claiming of abandoned women.

The 24 Institutions comprised in the above clauses, situated in every section of the Province, received from the Provincial funds the sum of $40,260, and having thus ascertained what are their various objects, it only remains to enquire whether a proper and equitable distribution of Government aid was made to each class of Institution, and to each individual establishment under that class.

With respect to the Institutions coming under the first heading, viz. : Hospitals and establishments of a curative character, Government aid may properly be given for two reasons ; first, for the relief of suffering and cure of disease, and secondly, for the practical training of medical students through observation of Hospital practice, and in the delivery of clinical lectures in connection therewith.

The fact that 2,914 patients were received and treated during 1871, by these ten Institutions, shows pretty conclusively that the first reason advanced in favour of granting aid to Hospitals is well sustained, and that that class of establishments has a strong claim upon the Province for assistance, but that claim is rendered still stronger, when it is considered that three-fourths of the persons thus treated, if not in indigent circumstances, were of that class who have to work for the daily bread of themselves and their families, and who, if Hospital treatment had not been open to them, when overtaken by sickness or accident, might have been permanently withdrawn from the working and wealth producing

population of the Province, and placed upon the charity of friends or the public. To guard against such a result, it is surely desirable that Government should make wise provision, either in granting aid to Hospitals already established in various parts of the Province, or in the founding of new Institutions, having the same object in view.

As regards the second reason advanced in favour of Government aid to Hospitals, it will not be denied that it is within the province of Governments to assist in giving to the public a well educated and properly trained medical profession, since they more than any other class of men in society have to do with public health, which it is clearly the duty of Government to protect. Certainly no better means could be taken to secure this desirable end, than by giving medical students an opportunity to walk the wards and observe the practice of a well conducted Hospital.

The amount of ignorance that prevails among members of the medical profession in respect to Lunacy, as displayed in the granting of certificates of insanity, strongly suggests the propriety of extending this privilege, by allowing students at Medical Colleges to have access also to the wards of Public Hospitals for the insane, and to lectures delivered by the Medical Superintendents of such Institutions, upon the nature and treatment of mental disease.

Having considered the desirability of granting aid to Hospitals, the question as to the basis or principle upon which it should be given, may now be examined.

In old and wealthy counties, the system of endowment largely obtains, although voluntary contributions by the people and Governments still find favour in Great Britain and the United States, but the management of the affairs of at least one, *originally* well endowed Hospital in this city, certainly is not favourable to the introduction of the endowment system into this Province.

Believing that Government aid to Hospitals should be granted, for the purpose of stimulating and encouraging private and municipal charity, I am of opinion that the extent of that aid should be contingent upon, and determined by the amount received from private and municipal sources, and by the relative number of patients received and treated in each Hospital. Whether this has been done in the past, the following summary of Hospital receipts for 1871 will show:—

Name of Hospital.	Number of Patients.	Amount received from Government.	Per Patient.	Amount received from Municipalities.	Per Patient.	Received from paying Patients.	Per Patient.	Subscriptions, Donations, and Bequests of private individuals, and from all other sources.	Per Patient.	Total Receipts for the Year.	Per Patient.
		$ cts.	$ cts.	$ cts.	$ c.	$ cts.	$ c.	$ cts.	$ cts.	$ cts.	$ cts.
General Hospital, Toronto	703	11200 00	15 93	1888 51	2 68	1737 58	2 47	426 00	60	15252 09	21 69
Do do Kingston	604	4800 00	7 94	.....	.....	722 31	1 19	827 42	1 37	6349 73	10 51
Hotel Dieu do do	200	800 00	4 00	.....	.....	220 91	1 10	1071 28	5 35	2092 19	10 46
General do London	215	2400 00	11 16	823 62	3 83	.....	.....	.....	.....	3223 62	14 99
City do Hamilton	536	4800 00	8 96	2102 47	3 92	217 58	0 40	.....	.....	7120 05	13 28
Roman Catholic Ottawa	250	1200 00	4 80	.....	.....	1207 25	4 82	251 87	1 00	2659 12	10 63
Protestant	121	1200 00	9 98	100 00	0 83	362 45	2 99	888 06	7 34	2550 51	21 07
General St. Catharines	121	1000 00	8 28	400 00	3 30	.....	.....	1609 25	13 29	3009 25	24 86
Eye and Ear Infirmary ..... Toronto	58	750 00	12 94	100 00	1 72	.....	.....	253 22	4 36	1103 22	19 02
Lying-in Hospital do	106	480 00	4 52	350 00	3 30	144 14	1 32	263 16	2 48	1237 30	11 67

An examination of the figures in the prefixed table shews that the Government grant to the several Hospitals was not distributed in proportion to the receipts of each, from private, municipal and other sources; and that it was not based upon the number of patients admitted to Hospital treatment in the several establishments: for while Toronto Hospital with its 703 patients, received from Government $11,200 00, or $15 93 per patient, Hamilton

Hospital with 536 patients, received only $4,800 00, or $8 96 per patient; and Kingston Hospital, which admitted 604 patients during the year, received $4,800, or only $7 94 per patient.

Nor can this disparity be justified by a comparison of the collective terms of residence of the patients in the various Hospitals. On the contrary such a comparison will only bring to view an increased unfairness in the distribution of aid. For, the 703 patients admitted to the Toronto Hospital had an aggregate Hospital residence of 29,574 days, which would make the Government grant of $11,200 00 equal to 37¾ cents per day for each day's residence of every patient received into the Hospital. The collective stay of the 536 patients received into the Hamilton Hospital was 21,608 days, which with the Government grant of $4,800 00 is only 22¼ cents per day of Government aid per patient; while at the Kingston Hospital the collective stay of the 604 patients was 17,583 days, or 26¾ cents per day, as Government aid.

If we analyse the receipts of these three Hospitals derived from other sources for the year 1871, we find that from Municipal grants Toronto received $2 68 per patient, Hamilton $3 92, and Kingston nothing, while from paying patients and private subscriptions Toronto obtained $3 07 per patient, Hamilton $3 92, and Kingston $1 37. The same disparity in receipts, in proportion to the number of patients and their aggregate residence exists in a lesser degree in all the Hospitals of the Province, which shews conclusively that there is a singular want of system and principle in the present mode of distributing Government aid.

HOSPITALS.	Detailed Analysis of Hospital Expenditure.						Cost of each Patient per Day.		
	Total number of patients under treatment.	Average stay of each patient in Hospital.	Collective stay of Patients in Hospital.	Cost of Food, Medicine and Medical Comforts.	Cost for Salaries, and Wages, Fuel and all other Expenditure, except Food and Medicine.	Entire cost of maintaining Hospital.	Daily cost of Food, and Medicine for each patient.	Daily Cost of Salaries and Wages, Fuel and all other expenses, except food and Medicine for each patient.	Daily cost of each Patient for all Hospital Expenditures.
		Days.	Days.	$ cts.	$ cts.	$ cts.	cts.	cts.	cts.
General Hospital, Toronto	703	42	29574	7810 79	8546 68	16267 47	$26\frac{41}{100}$	$28\frac{50}{100}$	55
Do do Hamilton	536	$40\frac{1}{2}$	21608	3484 54	3545 11	7029 65	$16\frac{12}{100}$	$16\frac{40}{100}$	$32\frac{52}{100}$
Do do Kingston	604	$29\frac{177}{1000}$	17583	3378 36	2984 93	6363 29	$19\frac{21}{100}$	$16\frac{97}{100}$	$36\frac{18}{100}$
Do do London	215	$21\frac{65}{215}$	4680	1219 41	2004 11	3223 52	$26\frac{04}{100}$	$42\frac{81}{100}$	$68\frac{85}{100}$
Hotel Dieu, do Kingston	200	16	3210	1109 99	579 71	1689 70	$34\frac{57}{100}$	$18\frac{05}{100}$	$52\frac{62}{100}$
General Protestant Hospital, Ottawa	121	50	6134	1704 76	1107 10	2811 86	$27\frac{70}{100}$	$18\frac{05}{100}$	$45\frac{82}{100}$
Roman Catholic Hospital, Ottawa	250	$32\frac{200}{200}$	8020	1286 15	1070 36	2356 51	$16\frac{10}{100}$	$13\frac{33}{100}$	$29\frac{34}{100}$
General and Marine Hospital, St. Catherines	121	$22\frac{3}{4}$	2663	896 68	1091 83	1961 51	$32\frac{65}{100}$	41	$73\frac{65}{100}$

It is generally admitted to be the case, and my own experience corroborates the statement, that in proportion as the number of patients or inmates of an Institution is increased the average daily cost of the maintenance of each inmate is reduced. This theory, however does not hold good in the Hospitals of Toronto, Hamilton, and Kingston, for, although a greater number of patients was admitted to the Toronto Hospital, the daily cost of maintaining a patient was 53 per cent greater than in Kingston, and 70 per cent greater than in Hamilton. This however in my opinion is attributable to bad executive and domestic managemrnt, as well as to certain defects in the structural and internal arrangement of the

building of the Toronto Hospital. It is thus shewn that the present method of distributing Government aid to Hospitals is almost entirely devoid of system; it is neither based upon the number of patients admitted to treatment, nor upon the receipts of such establishments from private and Municipal sources, and it is further shewn that there has been a singular inequality in the cost of maintaining patients, even in Hospitals which received and treated about the same number.

Believing it to be most desirable that these defects should be remedied, and also that Hospitals and Hospital administration should be placed upon a better footing throughout the Province, I would most respectfully submit the following suggestions for the consideration of your Excellency's Government.;—

1st. That certain Counties, Cities and Towns be apportioned to each Hospital already established, or that may hereafter be established as the circumstances of the Province may require; the buildings used for Hospital purposes to have sufficient space for the requirements of the district apportioned to it.

2nd. That the site and building used for a Hospital must be approved of by Government, and must possess all the necessary requisites for the purpose, such as proper drainage, absence from malarious influences, a plentiful supply of water, and convenience of position in respect of site. In structural arrangement there should be sufficient dormitory space, both single and associated for patients, the best means for effective heating and ventilation, together with such arrangements and appliances as will ensure economy and efficiency both in medical and domestic management.

3rd. Each Hospital to have a separate building, sufficiently far removed from other buildings for the complete isolation of patients suffering from infectious diseases.

4th. Where the necessities of a district require it, a wing attached to the General hospital or a building apart from it, shall be provided for persons suffering from chronic and incurable diseases. The care of such persons, and the general management of the affairs of such Hospital for chronics, to be under the direction and control of the Board of Management of the General Hospital.

5th. The affairs of every Hospital shall be controlled by a Board of Management composed of the following persons, viz., three members to be appointed by the Government, one of whom shall be Chairman of the Board:— The Warden of every County and the Mayor of every Town within the district apportioned to such Hospital that shall have subscribed its proportionate amount to the funds of the charity. In addition to which any person who may subscribe not less than $500 to the funds of the Hospital, shall be entitled to become an honorary life member of the Board of Management.

6th. Such Board to have full power to frame by-laws and regulations for the good government of the Hospital, and to appoint the officers for the same; such by-laws and appointments before taking effect to receive the approval of Government.

7th. Not less than sixty per cent of the entire number of beds that can be made up in each Hospital shall be reserved for patients who are unable to pay for their maintenance while residents of the Hospital, such patients having been properly certified to be unable to pay, and being either residents of the district apportioned to the Hospital or immigrants who have become sick while passing through such district or while at work within it.

8th. The amount of the annual Legislative grant to each Hospital shall be equal to the total amount received by such Hospital from Municipal grants and private donations and subscriptions for its *actual maintenance and support during* the preceding year.

If the plan above indicated be adopted, I have every reason to believe that the Hospital buildings and accommodation of the Province will be vastly improved, the wants of the suffering and poor amongst us will be more fully met, the Government grants made to such institutions will be both more economically and more usefully expended, and private and Municipal charity under this more thorough and systematic organization will be greatly increased and stimulated.

Poor-houses.

We now come to consider the claims of the second class of Charitable Institutions for Government support, viz., Houses of Industry.

Why this designation was applied to these establishments it is difficult to understand since, if we except ordinary house work no industry of any description is carried on in either,

of them. Government aid is confined to two establishments of this class, one located in the City of Toronto and the other in Kingston, the former of which receives $2,900 and the latter $2,400.

The ostensible aim of these Charities is the relief of the destitute poor of their respective cities, as well as to provide for homeless poor who have no claim upon other Municipalities in the Province.

At the Kingston House this service is confined to board and lodging within the House; but at Toronto out-door relief is carried on in connection with the establishment on a large scale and on a well organized and excellent system. For the year 1871, 247 persons were received into the Toronto House, in addition to which 1,945 out-door poor were relieved, while at Kingston for the same year 140 inmates were received and provided for in the House. That these establishments are in reality Poor-houses and nothing but that, both the character of their inmates and the nature of the work they are performing proves beyond doubt; it therefore only remains to enquire why they were singled out from other establishments of a similar character in the Province to become the recipients of Government aid.

It becomes the more necessary to make this enquiry since both the law and the genius of our Municipal Institutions require that every Municipallty shall take care of its own poor: and the enactment of the Statute of 1868 by the Ontario Legislature in respect to poor houses confirms this well understood wish of the people. And it is much to be regretted that so wholesome and necessary a law should through the operations of the *permissive* in place of a *compulsory* clause remain practically inoperative upon the Statute Book.

The returns of the Toronto House for 1870 shew that the 247 persons admitted that year were received from the following places, viz:—

From the City of Toronto	129
County of York and other Municipalities	93
Immigrants and Foreigners	25
	—247

The admissions (including the number in residence at the beginning of the year) for the year ending 30th September, 1871, were as follows:—

From the City of Toronto	159
County of York and other Municipalities	97
Immigrants and Foreigners	61
	—317

The returns for the Kingston establishment for the same periods were as follows:—

1870.

From the City of Kingston	90
County of Frontenac and other Counties	32
Immigrants and Foreigners	18
	—140

1871.

City of Kingston	100
County of Frontenac and other Counties	96
Immigrants and Foreigners	56
	—252

From an examination of these figures, it will at once be apparent that whatever claim these Institutions have upon the Province for aid, it must rest upon the number of *Immigrants* and *wandering poor* received into them. In the cases of Immigrants it will not be disputed that their reception and support in local Poor-houses constitute a good claim upon the Government for aid; but with respect to wandering poor, if poor-houses were established in various parts of the Province, in conformity with the spirit of the Statute, that class would be evenly distributed and provided for in the various Counties, or groups of Counties.

It, however, must be borne in mind that pauperism has a tendency to centralize itself, and that cities and towns are apt to be burdened with the support of a greater number of paupers than legitimately belong to them.

For these reasons it appears to me that city poor-houses are fairly entitled to receive aid from Government in proportion to the number of *Immigrants* and *wandering poor* they re-

ceive and support; but why this distribution of aid should be confined to the Cities of Toronto and Kingston,* I am at a loss to understand.

The expenditures of the Toronto House of Industry for the year ending 20th September, 1871, amounted to $8,719.05, while the receipts and the sources from which they came for the same period were as follows:—

From Province of Ontario	$2,900 00
" City of Toronto	4,000 00
" Private subscriptions and other sources	3,026 52
	$9,926 52

This exhibit certainly shows a very satisfactory condition of affairs: although it must be stated that the Government allowance of $2,900 is large compared with the number of Immigrants relieved. If, however, we institute a similar examination in the case of the Kingston Poor-house, a very different conclusion will be arrived at, for we find that while the expenditures of that establishment for the year ending 30th September, 1871, amounted to $2,581.45, the receipts and the sources from which they came were as follows:—

Province of Ontario	$2,400 00
City of Kingston—*nothing*	
Other Municipalities	109 00
Private subscriptions and other sources	159 92
	$2,668 92

We thus find a local Poor house established for the relief of the poor of the City of Kingston and its immediate vicinity, with only very few Immigrants or Foreigners admitted into it, almost entirely supported by Government, without a dollar being paid towards the support of its inmates by the city in which it is located.

This anomaly will become still more glaring and absurd, when we consider that the affairs of the house are entirely controlled by a Board of Directors, four of whom are appointed by the City Council, and eight by subscribers, whose entire contributions, which enabled them to vote, amounted to less than the paltry sum of one hundred dollars. For the purpose of correcting these defects and anomalies I would respectfully recommend:

1st. That the sum at present appropriated by the Legislature, with whatever additions may hereafter be made to it in aid of poor-houses, shall be distributed amongst all the poor houses in the cities of the Province, in proportion to the number of immigrants and foreigners admitted into the house, and the population of each city. Such annual Government grant not to exceed in amount one third of the sum received the preceding year from Municipal grants, private subscriptions and all other sources.

2nd. The Government to appoint not less than three of the local Directors as Managers of every poor-house in receipt of such Government aid. The Government to approve of the buildings and site used for the purposes of the poor-house, as well as the by-laws and regulations framed by the Directors for its Government, and the general management of its affairs.

Orphan Asylums, &c.

I have now to consider the claims for Government aid of that class of Institutions known as Orphan Asylums. Ten establishments of this kind were aided by the Province in 1871, to the extent of $5,280, while for the same year the sum of $38,895.32 was received from all other sources for their maintenance. The largest amount given by the Government to any of these Asylums was $640.00, and the smallest $320.00.

The small proportion that the Government grant bears to the total receipts of these establishments for their support and maintenance, may in the opinion of some, render the subject unworthy of examination. I apprehend, however, that this consideration should not deter us from enquiring upon what principle if any—the Government grant to these institutions was based. The appropriations made by Legislature for these purposes, however small, must always be a proper subject of examination. But here again, I fear an investigation will disclose an entire absence of system and method in the distribution of

* The Hamilton House of Refuge also received aid last year to the extent of $720.

Government aid. For we find that the Roman Catholic Orphan Asylum at Toronto, which admitted and supported 345 orphans during the year ending 30th September, 1871, received $640.00, while the same amount was given to the Orphans' Home, Kingston, which only received into the house during the same period 56 orphans. In like manner, $640 were paid to the Toronto Protestant Orphans and Female Aid Society, which had 117 children, while a similar amount was given to the Hamilton Orphan Asylum and Ladies' Benevolent Society, which admitted only 45. This disproportion, which exists in nearly all the establishments in question, clearly shows that the apportionment to each institution was not based upon the number of orphans received, nor the volume of work done by each, and these it seems to me are proper considerations to determine the amount that each Asylum should receive.

That the design of these Institutions, and the character of the work they are carrying on entitle them to Government aid can be easily shown, although at first sight it might appear that their foundation and support should be left entirely to the private benevolence of individuals in the localities in which they are placed, and to Municipal Corporations.

If, however, we consider for a moment the character and necessities of the youths who find a home within their walls, abundant proof will be furnished in favour of Government aid being extended to them, and perhaps more liberally than has been the case in the past. If the good accomplished by the operation of these Institutions is measured even by the low standard of public economy, who can tell the saving that has been effected to the Province in its criminal administration and maintenance, by the sheltering, reclaiming and deterring hand that was extended to the 1,200 orphans, and neglected and abandoned children, who found a home in these ten Institutions during the year 1871? How many of the children thus provided for, would, if left to themselves, in a very few years, have become inmates of our gaols, reformatories, and penitentiary, and a constant charge upon the public? It is, therefore, very clear that even in the interests of public economy, to say nothing of humanity, it is expedient to assist with Provincial funds these Institutions, but in order that this may be done upon a proper and equitable system, I would recommend *that the amount of aid given to each should be in proportion to the number of children received, and their aggregate residence therein, and the sum received by each Asylum from municipal and private sources.*

Hospital Operations for the year ending 30th September, 1872.

The operations of the several Hospitals of the Province during the year, with respect to admissions and discharges, are shown in the following table:—

Name of Hospital.	Admissions.				General Movements.		
	No. of patients remaining in Hospital on 30th September, 1871.	Admitted during the year ending 30th September, 1872.	Born in Hospital during the year.	Total No. of patients under treatment, including children born in Hospital, for the year ending 30th September, 1872.	Discharged.	Died in Hospital.	Remaining in Hospital on the 30th September, 1872
General Hospital, Toronto	65	599	1	665	501	80	84
" " Hamilton	56	452	26	534	437	40	57
" " Kingston	34	551	13	598	536	35	27
" " London	18	241	4	263	229	19	15
Hotel Dieu " Kingston	7	191	.....	198	175	13	10
Gen. Protes." Ottawa	17	180	.....	197	149	26	22
Rom. Cath. " do	12	380	.....	392	325	48	19
General and Marine Hospital, St. Catharines	9	121	5	135	110	12	13
Eye and Ear Infirmary, Toronto	5	50	.....	55	49	.....	6
	223	2765	49	3037	2511	273	253

An examination of the above table shows that 3,037 persons were under treatment in all the Hospitals during the year, being an increase of 229 patients over the previous twelve months.

The mortality has been somewhat greater during the present than the former year, 27 deaths having taken place against 201.

The number of patients remaining in Hospitals at the close of the present official year has also increased to 253, as compared with 223 at the same period last year.

The sex, religious persuasions and nationalities of these 3057 patients were as follows:—

Sex.

Males	1940
Females	1097
	3037

Religious Persuasions.

Protestants of any denomination	1809
Roman Catholics	1110
Other religions, or not known	118
	3,037

Nationalities.

Canada	1,030
England	686
Ireland	819
Scotland	168
United States	110
Other Counties or not known	204
	3,037

The following table gives the receipts of the various Hospitals, and the sources from which they were obtained.

Name of Hospital.	Location.	Balance on hand 30th September, 1871.	Amount received from Government.	Amount received from Municipalities.	Amount received from paying patients.	Income from property or investments belonging to Hospital.	Subscriptions, donations and bequests from private individuals.	From all other sources.	Total receipts for the year, including balance on hand.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
General Hospital	Toronto	2988 16	11200 00	3022 29	1046 07	6359 77	2000 00	2157 04	28773 33
" "	Kingston	120 88	4800 00	.....	359 29	.....	551 12	618 20	6449 49
Hotel Dieu "	do	.....	800 00	65 00	210 70	.....	560 10	.....	1635 80
General "	London	.....	2400 00	*1723 05	49 00	.....	.....	.....	4172 05
City "	Hamilton	.....	4800 00	2545 00	259 82	.....	.....	.....	7604 82
Rom. Cath. "	Ottawa	41 15	1200 00	100 00	1098 08	.....	191 03	1128 40	3758 66
Protestant "	do	1419 79	1200 00	600 00	430 25	295 00	1604 79	1083 43	6633 26
General and Marine	St. Catharines	769 42	1500 00	550 00	240 00	.....	121 00	519 33	3699 7
Eye and Ear Infirmary	Toronto	436 60	1000 00	790 57	.....	.....	203 00	.....	2430 1
		5776 00	28900 00	9395 91	3693 21	6654 77	5231 04	5506 40	65157 33

* $1567.32 of the above amount is stated to have been received from the Corporation of London.

The above table shews that the Government contributed $28,900 in support of all the institutions named, while the receipts from all other sources amounted to $,30481.33. From the last named amount, however, should be deducted $6,359.77, being the income derived from property belonging to the Toronto Hospital. Inasmuch as the debenture indebtedness of that Institution exhausts the income from property for the payment of interest, that revenue cannot fairly be looked upon as money received for the maintenance of the Hospital. The amount therefore received from all sources, exclusive of Government aid, was only $24,121.56. This statement shews that the Province was the largest contributor to the support of Hospitals during the year. In view of this it is but reasonable that their administration and management should come more directly under Government control in the manner indicated in a previous part of this Report.

An examination into the sources from which the $24,121.56, contributed to Hospital funds, was received, is in most cases far from creditable to the liberality of Municipal Corporations. And considering the great amount of wealth now accumulated in the cities of this Province, I cannot but think that if the subject of Hospital support was placed fairly before the public by Hospital Boards that the subscriptions, donations, and bequests of private individuals would be vastly increased. In other countries, and even in the sister province of Quebec, in connection with that splendid charity the Montreal Hospital, we find that the most liberal and munificent contributions are constantly being made towards Hospital endowment and maintenance. Certainly no more laudable or desirable object for benevolence could be provided.

The two following tables shew the expenditures of the several Hospitals under the two headings, of "food, medicine and general dietaries," and "salaries, fuel and all other expenses," and the daily cost of each patient in the several asylums for the services named.

The entire receipts of the several Hospitals for the year ending 30th September, 1872, and the sources from which they were derived, are given in the following statements:

DETAILED STATEMENT of Hospital Expenditure for the year ending 30th September, 1872.

HOSPITALS.	FOOD, MEDICINE, &c.							SALARIES AND WAGES, FUEL AND ALL OTHER EXPENSES.							
	Beer, Wine and Spirits.	Medicine and Medical Comforts.	Butcher's Meat.	Flour and Bread.	General Groceries, and Provisions.	Milk.	Total.	Salaries and Wages.	Fuel, Light, and Water.	Bedding, Clothing, Crockery, and Furniture.	Taxes and Insurance	Repairs.	Advertising, Printing, Postage, &c.	Laundry cleaning and scrubbing.	Other Expenditures not enumerated.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
General Hospital, Toronto.	682 65	1197 77	1046 28	934 78	1727 98	1028 89	6618 35	3631 18	3623 11	1336 87	765 61	261 05	236 70	115 06	1294 71	11264 29
do do Hamilton .	224 84	435 82	780 02	921 67	949 74	312 22	3624 31	1636 00	810 47	326 98	500 00	268 41	16 33	252 92	169 00	3980 11
do do Kingston ..	112 05	221 23	680 81	606 37	1240 63	282 24	3143 33	1102 22	995 96	192 81	140 00	300 51	40 25	62 31	183 65	3017 71
do do London ...	38 25	.....	321 34	292 99	836 97	63 72	1553 27	1030 00	628 51	518 26	100 00	131 82	25 00	.....	185 19	2618 78
Hotel Dieu, do. Kingston	25 50	97 85	290 50	293 40	467 85	.....	1175 10	70 00	276 25	71 47	72 00	70 45	6 00	7 10	75 00	648 27
General Protestant Hospital, Ottawa	40 69	267 72	.....	.....*	1865 56	.....	2173 97	832 75	427 08	305 38	45 50	131 87	65 42	.....	38 25	1846 25
Roman Catholic Hospital, Ottawa	.....	148 15	742 95	389 00	858 51	22 25	2160 86	85 69	392 30	285 23	266 00	153 00	.....	74 00	159 28	1415 50
General and Marine Hospital, St. Catharines ...	33 53	209 58	307 39	144 56	563 19	.....	1258 25	330 00	171 99	26 48	.....	144 91	.....	52 28	64 22	789 88
	1157 51	2578 12	4169 29	3582 77	8510 43	1709 32	21707 44	8717 84	7325 57	3063 48	1889 11	1462 02	389 70	563 67	2169 30	25580 7

* The steward of the Hospital furnishes the rations of the patients by contract.

HOSPITALS.	Detailed Analysis of Hospital Expenditures.						Cost of each Patient per Day.		
	Total number of patients under treatment.	Average stay of each patient in Hospital.	Collective stay of patients in Hospital.	Cost of Food, Medicine, and Medical Comforts.	Cost for Salaries and Wages, Fuel and all other Expenditure, except Food and Medicine.	Entire cost of maintaining Hospital.	Daily cost of Food, and Medicine for each patient.	Daily Cost of Salaries and Wages, Fuel and all other expenses, except Food and Medicine for each Patient.	Daily cost of each patient for all Hospital Expenditure.
		Days.	Days.	$ cts.	$ cts.	$ cts.	cts.	cts.	cts.
General Hospital, Toronto	665	43¼	28975	6618 35	11264 29	17882 79	22⅞	38¾	61½
Do do Hamilton	534	47	25207	3624 31	3980 11	7604 42	14¼	16	30¼
Do do Kingston	598	27	14980	3143 33	3017 71	6161 04	21	20¼	41¼
Do do London	263	35	9309	1553 27	2618 78	4172 05	16⅜	28¼	4
Hotel Dieu, do Kingston	198	17	3345	1175 10	648 27	1823 37	35¼	19¼	54⅜
General Protestant Hospital, Ottawa	197	31¼	5789	2173 97	1846 25	4020 22	37½	32	69¼
Roman Catholic Hospital, do	392	21¼	8319	2160 86	1415 50	3576 21	26	17	43
General and Marine Hospital, St. Catharines	135	24	3149	1258 25	789 88	2048 13	40	25	65

RETURN of particulars required by the Legislative Assembly from all Charitable Institutions in receipt of Government aid in the Province of Ontario, for the year ending 30th September, 1872.

NAME OF INSTITUTION.	LOCATION.	Number of Inmates in residence on 1st of Oct., 1871.	Admissions during the year ending 30th Sept., 1872.	Total number of Inmates.	Discharged.	Died.	Remaining in residence on the 30th September, 1872.	CLASSIFICATION OF INMATES DURING 1871 AND 1872.		
								Protestants of any denomination.	Roman Catholic.	Other Religions or not known.
Protestant Orphans' Home and Female Aid Society	Toronto	79	34	113	25	2	86	113	.....	.....
Roman Catholic Orphan Asylum	Do	233	126	359	98	17	244	14	345	.....
Burnside Lying-in Hospital	Do	5	111	116	110	.....	6	79	32	5
Magdalen Asylum	Do	29	33	62	30	.....	32	32	20	10
House of Providence	Do	136	97	233	71	23	139	19	214	.....
Girls' Home and Public Nursery	Do	74	53	127	45	2	80	83	2	42
Boys' Home	Do	54	54	108	51	.....	57	53	.....	55
House of Industry	Do	71	165	236	141	16	79	158	71	7
House of Industry and Refuge for Indigent Sick	Kingston	30	96	126	97	1	28	66	57	3
Orphans' Home	Do	26	11	37	12	.....	25	37	.....	.....
Roman Catholic Orphan Asylum	London	56	44	100	32	3	65	7	58	35
Roman Catholic Orphan Asylum	Hamilton	116	25	141	23	2	116	.....	116	25
Orphan Asylum and Ladies' Benevolent Society	Do	37	15	52	17	4	31	31	.....	21
House of Refuge	Do	48	90	138	97	5	36	77	61	.....
St. Patrick's Orphan Asylum	Ottawa	42	55	97	37	1	59	.....	97	.....
Protestant Orphan Asylum	Do	26	41	67	29	3	35	67	.....	.....
St. Joseph's Orphan Asylum	Do	59	66	125	59	3	63	2	123	.....
Magdalen Asylum	Do	45	23	68	15	1	52	.....	52	16
		1,166	1,139	2,305	989	83	1,233	828	1,248	219

RETURN of particulars required by the Legislative Assembly from all Charitable Institutions in receipt of Government aid in the Province of Ontario, for the year ending 30th September, 1872.

NAME OF INSTITUTION.	LOCATION.	RECEIPTS FOR YEAR ENDING 30TH SEP., 1872.						EXPENDITURE FOR THE YEAR ENDING 30TH SEP., 1872.			REMARKS.
		Balance from 1871.	From Government.	From Municipalities.	From payment by inmates or other earnings.	From private and general sources.	Total.	Expended.	Balance on hand.	Total.	
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
Protestant Orphans' Home and Female Aid Soc'y	Toronto	1032 46	640 00	700 00	32 00	2676 00	5080 46	4045 50	1034 96	5080 46	
Roman Catholic Orphan Asylum	Do	14 15	640 00	400 00	785 00	5184 00	7023 75	7009 75	13 40	7023 15	
Burnside Lying-in Hospital	Do	665 36	480 00	350 00	406 70	258 46	2160 52	1800 50	360 02	2160 52	
Magdalen Asylum	Do	3739 44	480 00	500 00	1007 22	1332 25	7058 91	2584 02	*4474 89	7058 91	* Of this amount $4000 is on account of Building Fund.
House of Providence	Do	7 75	320 00	200 00	374 91	3295 78	4198 44	4192 17	6 27	4198 44	
Girls' Home and Public Nursery	Do	95 59	320 00	100 00	778 22	3608 66	4902 47	4816 61	85 86	4902 47	
Boys' Home	Do	55 39	320 00	350 00	116 15	3351 60	4193 14	3971 25	221 89	4193 14	
House of Industry	Do	2376 28	2900 00	4000 00	110 55	2928 13	12314 96	8714 96	3600 00	12314 96	
House of Industry and Refuge for Indigent Sick	Kingston	87 47	2400 00	.....	174 50	381 61	3043 58	2864 48	179 10	3043 58	
Orphans' Home	Do	12 35	640 00	.....	103 50	1289 44	2045 29	1504 70	540 59	2045 29	
Roman Catholic Orphan Asylum	London	31 08	640 00	.....	432 00	4744 40	5877 48	5862 58	14 90	5877 48	
Roman Catholic Orphan Asylum	Hamilton	665 81	640 00	200 00	296 00	4028 65	5830 46	5017 42	813 04	5830 46	
Orphan Asylum and Ladies' Benevolent Society	Do	71 00	640 00	636 00	.....	25 00	1372 00	1372 00	.....	1372 00	
House of Refuge	Do	.....	720 00	1778 42	.....	.....	2498 42	2498 42	.....	2498 42	
St. Patrick's Orphan Asylum	Ottawa	85 55	480 00	.....	222 25	1327 45	2115 25	1627 60	487 69	2115 25	
Protestant Orphan Asylum	Do	1242 20	480 00	50 00	.....	1549 01	3321 21	1957 17	1364 00	3321 21	
St. Joseph's Orphan Asylum	Do	10 00	480 00	25 00	412 89	2265 44	3193 33	3192 23	1 10	3193 33	
Magdalen Asylum	Do	2 78	480 00	.....	728 00	659 60	1870 38	1870 38	.....	1870 38	
		10194 66	13700 00	9289 42	5979 89	38935 48	78099 45	64901 74	13197 71	78099 45	

SEPARATE INSPECTION REPORTS

UPON

Hospitals and Charitable Institutions.

Hamilton City Hospital.

Statutory inspection was made of this Hospital on the 25th August, every part of the building was examined, and every part of it found to be admirably clean and well ordered.

The excellent natural window ventilation of the Hospital enables a pure atmosphere to be had in every ward. The absence of offensive odours, too often found in Hospitals, shewed that the important sanitary requisite of pure air was properly appreciated in the Hamilton Hospital. The beds and bedding were very clean, tidy and comfortable, and the general condition of the Hospital gave evidence of good management.

There were 45 patients occupying beds in the Hospital at the time of my visit, of whom 27 were men and 18 women. Three of this number were small pox patients, who had nearly recovered from the effects of the disease.

I saw and conversed with them all, and received no complaints either in respect to domestic or medical treatment. Twelve of the patients had occupied beds in the Hospital for much longer periods than the design of the establishment contemplated or its regulations should permit. Although nearly all these patients had ailments, they were nearly in every case of a chronic character.

I was present when dinner was served to the patients, the food was of excellent quality and abundantly supplied, and the meal was served in a very clean and tidy way.

The position of the small pox ward affords only *partial* isolation, which it would be well for the managers to render *complete* at the earliest day possible. While the confined and contracted ground-space attached to the Hospital renders this rather difficult if not impossible, it strongly suggests the desirability of the Hospital authorities acquiring additional ground before the land surrounding the Hospital is built upon. Not only is additional space required in order to secure complete isolation for the infectious wards, but also to obtain more room for the buildings requisite for domestic purposes, as well as with a view to having a portion of the land ornamented and planted to give pleasure and airing grounds to the patients.

In determining what is thus required in connection with so important and useful a charity, the flourishing City of Hamilton should have regard to its future Hospital requirements, and not to the present only.

Five hundred and thirty-four patients were under treatment in this Hospital during the year, which number includes 26 children born in the house. The average residence of each patient in Hospital was considerably increased by the number of old chronic cases who live in the Hospital, but who should be in some other Institution.

These 534 patients were received from the following places :—

City of Hamilton	383
County of Wentworth	44
Other Counties in Province, including immigrants	48
Foreigners and aliens	59
	534

The receipts of the Hospital, and the sources from which they came, were as follows :—

From the Government	$4,800 00
City of Hamilton	2,314 85
Other Municipalities	230 15
Paying patients	259 82
	$7,604 82

The Hospital expenditure for the year was as follows:—

Food and medicine, and medical comforts	$3,624 31
Fuel, light, water and other charges	2,344 00
Salaries and wages	1,636 00
	$7,604 31

These figures would indicate the daily cost of each patient's food and medicine to be 14½ cents, and for all other Hospital expenses, 16 cents, making a total of 30½ cents per day, for the daily support and maintenance of each patient in Hospital.

Kingston General Hospital.

Inspection was made of this Hospital on the 16th August, when every part of it was found in its usual excellent state of cleanliness and order; with its domestic and medical affairs under good management, and the patients in the enjoyment of all the comforts that could be extended to them under their circumstances.

There were then thirty-four patients in residence, viz., twenty-three men and eleven women. Of this number ten were from the City of Kingston, ten from the County of Frontenac, and ten from other counties, chiefly on the Bay of Quinté; two were immigrants, and two were American sailors.

Twenty, of the thirty four patients had been admitted to the Hospital within a month; three had been residents for over a month; three over two months; five over three months; two over six months; one over a year; and one over two years. With two exceptiones very patient in the Hospital was a proper subject for such an establishment.

The presence of foreign sailors in this Hospital, as well as in the one at Toronto, suggests the propriety of the Dominion Government subscribing to its funds for the treatment and maintenance of sailors overtaken with sickness or disease while in the respective ports The fact that this is now done in the case of St. Catharines Hospital, is evidence that the principle indicated in this recommendation is not only correct, but it is acknowledged to be so by the Dominion Government.

Five hundred and ninety-eight patients were admitted to the Kingston Hospital during the year, each of whom remained for the average period of twenty-seven days, and the collective stay of the entire number was 14,980 days.

These five hundred and ninety-eight patients were received from the following places :—

City of Kingston	285
County of Frontenac	63
Other Counties of the Province	201
Other countries, inciuding immigrants	49
	598

The receipts of the Hospital for the year were $6,128·61, and were obtained from the following sources:—

Government Grant	$4,800 00
Paying patients	359 29
Donations	551 12
Hospital practice fees	56 00
Other sources	362 20
	$6,128 61

The expenditures for the same period amounted to $6,141·04, as follows:—

Food, medicine and medical comforts	$3,143 33
Fuel, light, water and other charges	1,915 49
Salaries and wages	1,102 22
	$6,161 04

The figures would show the daily cost of each patient's food and medicine to be 21 cents, and for all other Hospital expenses, 20¼ cents, making a total of 41¼ cents per day for support and maintenance of each patient in Hospital.

Toronto General Hospital.

This Hospital was inspected on the 28th August, on which day there were eighty-six patients in residence, of whom fifty-eight were males and twenty-eight females. These patients, I was informed, were being supported in the Hospital as follows:—

By the City of Toronto, until the patients could be placed on the free list	39
By other Municipalities on the same terms	3
By the Government as immigrants	1
By themselves as paying patients	27
By voluntary contribution	10
By other sources	6
	86

I saw and conversed with every patient in the Hospital, from whom I received no complaints, either in respect to medical or domestic treatment.

Considerable additions have been made to the stock of bedding, which, in most of the beds, was found in a very clean and tidy state.

The various wards, with the exception of the one occupied by the blind patients, were in a clean and orderly state. The atmosphere of the blind ward was rather close, and the room was overcrowded with beds, which, considering the amount of vacant space in the building, there was no necessity for.

The other portions of the building were in very fair order, but both the wards and other parts of the establishment lack many of the essentials and comforts of an Hospital.

A more compact and better-arranged building, furnished with all proper sanitary appliances and Hospital comforts, could have been provided for a much less sum than the present pretentious, but exceedingly defective structure cost.

Some of the water closets were out of order, and there was evidence in the basement of bad drainage. I was informed that an open surface drain runs underneath the full length of the basement corridor floor.

To heat this building, *very insufficiently*, it cost $2,693·38 last year, but to heat it sufficiently, under the present system, would cost not less than $4,000 a year, which strongly suggests the desirability of introducing steam or hot water for heating purposes.

Six hundred and sixty-five patients occupied beds in this Hospital during the year ending 30th September, whose collective stay in the house amounted to 28,975 days. The average period of residence of each patient was 43⅓ days.

These patients were admitted to the Hospital from the following places:—

City of Toronto	481
County of York	46
Other Counties in the Province	71
Other countries, including immigrants	67
	665

The Hospital receipts, and the sources from which they were derived, were as follows:—

Province of Ontario	$11,200 00
City of Toronto	2,751 49

Other Municipalities	270 80
Paying patients	1,046 07
Income from property	7,216 81
Subscriptions, donations and bequests	2,000 00
Students' admission fees	300 00
	$24,785 17

The expenditures, for maintenance, for the same period were as follows:—

Food, medicine and medical comforts	$6,618 35
Fuel, light, water, furniture and other expenses	7,633 11
Salaries and wages	3,631 18
	$17,888 64

An analysis of these figures shows that the daily cost of each patient in respect of food, medicines, medical comforts was $22\frac{71}{100}$ cents; fuel, light, water, furniture and other Hospital expenditures, $38\frac{87}{100}$ cents, making a total of $61\frac{58}{100}$ cents per day for the daily support and maintenance of each patient in Hospital.

County of Carleton General Protestant Hospital, Ottawa.

Statutory inspection was made of this Hospital on the 7th September. The several wards were found in a fair state of cleanliness and order, although some of the rooms were very close and bad smelling, owing to bad ventilation and low ceilings.

The question of providing increased Hospital accommodation for the City of Ottawa, and the Ottawa country was, at the time of my visit, in a fair way of being satisfactorily settled. A considerable amount of money had been subscribed by the citizens of Ottawa towards new buildings, and architects had been invited to send in competitive plans and estimates for the erection of the same.

Having been requested by the Chairman of the Hospital Board to inspect the plans thus furnished, I made an examination of four sets, and recommended the adoption of the one best adapted in point of construction, internal arrangement, and cubic space for that portion of the Province. Several improvements, alterations and additions were recommended to be adopted before finally proceeding with the buildings under the plans and specifications.

The Board of Directors were strongly recommended not to attempt to provide increased accommodation by additions to, or in the reconstruction of, the present Hospital building.

At my visit there were seventeen patients under treatment, viz., thirteen men and four women. One of this number was a small-pox patient, who occupied a bed in the outside ward.

I saw and conversed with every patient, from whom I received no complaints, but all expressed satisfaction with their treatment.

One hundred and ninety-seven patients occupied beds in the Hospital during the year, of whom one hundred and forty-three were males, and fifty-four females. These patients were received into the Hospital from the following places:—

City of Ottawa	87
County of Carleton	45
Other Counties in the Province, including immigrants and foreigners	65
	197

The receipts of the year amounted to $5,213·47, and were received from the following sources:—

Province of Ontario	$1,200 00
Municipalities	600 00
Paying patients	430 25
Subscriptions, donations and bequests	1,604 79
From all other sources	1,378 43
	$5,213 47

The expenditures of the Hospital for the year amounted to $4,020·22, for the following services:—

Food, medicine and medical comforts	$2,173 97
Other expenses	1,013 50
Salaries and wages	832 75
	$4,020 22

These figures would indicate the daily cost of each patient's food and medicine to be $37\frac{55}{100}$ cents, and for all other Hospital expenses, $31\frac{89}{100}$ cents per day, making a total of $69\frac{44}{100}$ cents per day for the daily support and maintenance of each patient in Hospital.

Roman Catholic Hospital, Ottawa.

I visited this Hospital on the 7th September, on which day there were seventeen patients occupying beds in its wards, three of whom were paying patients and fourteen were on the free list. No less than eight of the inmates were, before admission, residents of the Province of Quebec. I saw and conversed with every patient, all of whom expressed themselves as being thoroughly satisfied with their treatment.

Every ward and room in the Hospital was found in a scrupulously clean, neat and well ordered condition, with all the arrangements and appointments of the Hospital, for the care and comfort of the patients, of the best character.

Three hundred and thirty-two patients were admitted during the year from the following places:

City of Ottawa	319
County of Carleton	10
Other Counties	14
Immigrants and foreigners	49
	392

The receipts of the Hospital and the sources from which they were obtained, were as follows:

Province of Ontario	$1,200 00
Municipality	100 00
Paying Patients	1098 08
Donations amd Bequests	191 03
Other sources	1,128 40
	$3,717 51

The expenditures for the same period were as follows:

Food, Medicines, and Medical comforts	$2,160 86
Fuel, light, and other expenses	1,329 81
Salaries and wages	85 69
	$3,576 36

These figures would indicate the daily cost of each patient's food and medicine to be $25\frac{97}{100}$ cents, and for all other Hospital expenses $17\frac{01}{100}$ cents making a total of $42\frac{98}{100}$ cents per day for the daily support and maintenance of each patient in Hospital.

London City Hospital.

I visited this Hospital on the 23rd October, when there were 17 patients in residence, of whom 11 were men and 6 women. Of this number only one was upon the roll as a paying patient—the rest having been admitted free.

The male and female patients occupied separate buildings. The one occupied by the former is not unlike a barn in appearance and is just about as cheerful in its internal arrangements and surroundings. The women's quarters are somewhat better, but whether in respect of the class of buildings, their internal arrangement or external surroundings, they are utterly unfitted for Hospital purposes, and the sooner they are abandoned the better.

The beds and bedding were clean and fairly comfortable, and the wards were in as orderly a condition as their structural defects will admit of.

Three of the inmates were proper subjects for a poor-house, but not for an Hospital, as their only ailment was old age.

The total number of patients received into this Hospital during the year was 263, the former places of residence of the same are exhibited in the following summary:

From the City of London	177
County of Middlesex	17
Other Counties in the Province	9
Other countries including immigrants	60
	263

The expenditures of the Hospital for the year were $4,172 05, as follows:

For food, medicine and medical comforts	$1553 27
Fuel, bedding and other expenses	1588 78
Salaries, and wages	1030 00
	$4172 05

As the collective stay of all the patients admitted to the Hospital was equal to 9309 days, these figures would show the daily cost of food and medicine per patient to be $16\frac{68}{100}$ cents, and for all other Hospital expenses $28\frac{13}{100}$ cents, making a total of $44\frac{81}{100}$ cents per day for the daily support and maintenance of each patient in Hospital.

Hotel Dieu Hospital, Kingston.

This Hospital was visited on the 16th August, on which occasion there were fifteen patients under treatment in the house, viz: 8 men and 7 women. Two of the number were aged and infirm persons who would have been better subjects for a Poor-House, but as there were plenty of vacant beds in the House, and as they were suffering from chronic ailments, they were allowed to remain in the Hospital.

Three of the patients were from the City of Kingston—one from the County of Frontenac—four from the adjacent counties, and seven from other counties in the Province.

The entire premises were found in the most admirable order, and thoroughly clean and neat throughout.

The upper story of the building is used for an Orphan Asylum. There were 25 orphans and neglected children in it at the time of my visit.

One hundred and ninety-eight patients occupied beds in the Hospital during the year, received from the following places:

City of Kingston	70
County of Frontenac	58
Other Counties in the Province	60
Immigrants and Foreigners	10
	198

The receipts of the Hospital for the year were:

From the Province of Ontario	$800 00
Municipalities	65 00
Paying patients	210 70
Subscriptions, donations, &c.	560 10
	$1635 80

The expenditure for the same period were.

For food, medicine, and medical comforts	$1175 10
Fuel, light, and other expenses	578 27
Salaries and wages	70 00
	$1823 37

These figures would indicate the daily cost of each patient's food and medicine to be $36\frac{13}{100}$ cents and for all other Hospital expenses $19\frac{38}{100}$ cents, making a total of $54\frac{51}{100}$ cents per day for the daily support and maintenance of each patient in Hospital.

General and Marine Hospital, St. Catharines.

This Hospital was visited and inspected on the 8th of August. There were on that occasion twelve patients under treatment in the house—four of whom were received from the Town of St. Catharines; two from the City of Hamilton; two from Toronto; two from the County of Welland; and two from the United States. Only one of these patients paid for Hospital accommodation—all the rest had been admitted as free patients.

Five were sailors, for the support of which class of patients the Dominion Government gives $500 per annum to the funds of the Hospital.

The several wards of the Hospital as well as its other departments, were in a very clean and orderly state at the time of my visit. The wards for females are too confined in space.

The beds were clean and tidily kept.

One hundred and thirty-five patients were admitted to the Hospital during the year, from the following places:—

Town of St. Catharines	27
County of Lincoln	17
Other Counties in the Province	38
Sailors, Immigrants and Foreigners	53
	135

The receipts for the year and the sources from which they came were as follows:—

From Ontario Government	$1000 00
" Dominion "	500 00
" Municipalities	550 00
" Paying patients	240 00
" Subscriptions and donations	121 00
" All other sources	519 33
	$2930 33

The expenditnres for the same period were:

Food, medicine and medical comforts	$1258 25
Other expenses	459 88
Salaries and wages	330 00
	$2048 13

These figures would indicate the daily cost of each patient's food and medicine to be $39\frac{95}{100}$ cents, and for all other Hospital expenses $25\frac{05}{100}$ cents, making a total of 65 cents per day for the daily support and maintenance of each patient in Hospital.

Poor-houses. House of Industry, Kingston.

This establishment was visited on the 17th of August, on which day there were 27 names on the roll—25 of this number I saw and conversed with—the others were said to be absent, at the time, in the city. Of these 27 inmates, no less than 26 were from the City of Kingston, the remaining one being from the County of Frontenac. No better proof can be furnished of

the local poor-house character of this establishment than simply to state this fact, and in view of it, it is surely the duty of the Corporation of Kingston to assist in the maintenance of its inmates ; a duty which has been utterly neglected by that body in the past.

The inmates were all very well satisfied with their treatment, and had no complaints to make.

An examination of the House Register showed that a considerable number of strangers had been received during the previous year, although only retained in the house for very short periods—the long period inmates being chiefly confined to those received from the city.

The several dormitories and other portions of the house were found to be in a much more orderly and cleanly condition than found at any of my previous visits, and, in fact, were as tidy and comfortable as the dilapidated condition of the premises would admit of.

The present premises having been found to be unfitted, both from their condition and situation, for the purpose of the charity, a very eligible property has been acquired. Alterations and additions to the buildings are now in progress, which when completed will render them complete in all respects.

During the past year one hundred and twenty-six persons were admitted to the house, whose collective stay therein was stated to be 9,984 days, equal to an average stay for each inmate of 79 $\frac{92}{100}$ days. These inmates were stated in the return to have been received from the following places:—

City of Kingston	42
County of Frontenac and other Counties	60
Immigrants, Foreigners, &c.	24
	126

The entire receipts of the house for the past year, and the sources from which they came were as follows:—

Province of Ontario	$2400 00
City of Kingston, *nothing*	" "
County of Frontenac, *nothing*	" "
Other municipalities, *nothing*	" "
Payment of inmates	174 50
Subscriptions, donations, &c.	98 92
All other sources	282 69
	$2956 11

The expenditures of the establishment for the same period were as follows:—

Food	$1460 85
Clothing and furniture	168 20
Fuel, light, repairs and all other expenses	1234 93
	$2863 98

House of Industry, Toronto.

Statutory inspection was made of this establishment on the 25th of November, on which occasion there were 78 poor persons occupying beds in the house. Of this number 41 were men, 23 women, and 14 children.

Many of the inmates were physically incapaciated for work, being either afflicted with blindness, lameness or some other bodily defect, and with very few exceptions, they were nearly all very old and infirm.

One of the inmates, a boy brought up in the house appeared to be quite idiotic. The manager was instructed to make application for his admission to the London Idiot Asylum. Every ward, room and dormitory in the house was examined, and found in the best possible order, with the utmost cleanliness prevailing throughout.

The affairs of this establishment continue to be conducted in the most efficient manner; and whether in respect to the good accomplished, or to the systematic and thorough manner in which its affairs are administered this Institution must be pronounced a model Poor-house.

During the year ending, 30th September, 236 persons were admitted to the house, whose collective stay was equal to 27,657 days. The average residence of each inmate being 107 days.

These 236 persons were received from the following places, viz. :—

City of Toronto	115
County of York and other Counties in the Province	63
Immigrants and Foreigners	58
	236

In addition to the in-door work of the house, 2,128 out-door poor were relieved during the year, who belonged to the following places :—

City of Toronto	1130
County of York and other Counties	264
Wandering poor	186
Immigrants and Foreigners	548
	2128

The receipts of the house for the year, and the sources from which they were derived were as follows :—

Province of Ontario	$2,900 00
City of Toronto	4,000 00
Payments of inmates	110 55
Income from property	785 12
Subscriptions, donations and bequests from private individuals	1,844 00
All other sources	299 01
	$9,938 68

The expenditures for the same period were as follows :—

Food, clothing, medicine and medical comforts	$3,834 54
Fuel, water and light, (including coal distributed)	2,348 82
Other expenses	1,831 60
Salaries and wages	700 00
	$8,714 96

House of Refuge, Hamilton.

This establishment was placed on the list of Institutions in receipt of Government aid this year. At my visit to it on the 26th August there were 26 women, 8 children, and 1 old man in residence, who, with four exceptions, were all received into the House from the City of Hamilton. Nearly all of the adult inmates were aged, infirm and helpless; four of the women were blind, and one was insane.

The House used for the purposes of the charity is an old frame building situated at the base of the mountain. Neither the building itself nor its internal arrangements are at all suited for a Poor-House. But although somewhat dilapidated it was scrupulously clean and very orderly throughout. One hundred and forty-eight persons were received into the House during the year, viz., 124 males and 24 females.

The receipts of the establishment for the year were as follows :—

Province of Ontario	$720 00
Municipalities	1,778 42
	$2,498 42

The expenditures for the same time were for—

Food and clothing	1,519 27
Fuel	210 00
Rent and taxes	300 00
Salaries and wages	350 00
Sundries	119 15
	$2,498 42

Eye and Ear Infirmary, Toronto.

The operations of the Infirmary for the year were as follows:—

Total number of patients admitted to the House as in-door patients	55
Total number of external patients who received treatment during the year	278

The in-door patients were received from the following places:—

City of Toronto	7
County of York	2
Other Counties	36
	55

These patients were supported in the Infirmary in respect of board—all medical treatment being free—as follows:—

Number of patients who paid for their own board	37
Number of patients whose board was paid for by Municipalities	14
Number of patients whose board was paid for by Associations	4
	55

The external patients, with the exception of eighteen, were all said to have been residents of Toronto, although it is very likely that many of them only came to the city to obtain medical treatment.

I visited the Infirmary on the 30th November, when there were eight patients in residence. The house in all its departments was clean and orderly, and as comfortable in its appointments as the limited space and defective internal arrangement will admit of.

The receipts for the year, and the sources from which they came, were as follows:—

Province of Ontario	$1,000 00
City of Toronto	100 00
Other Municipalities	690 57
Private subscriptions, &c	203 00
	$1,993 57

PRISONS AND REFORMATORIES.

CENTRAL PRISON.

The progress of the Central prison buildings, since my last report, has not been as rapid or satisfactory as it should have been. The foundations of the main buildings and the dormitory wings are only just completed, ready to commence the brickwork, and in fact may be said to be only above-ground, while the workshops are no farther advanced than the contract requires. This delay is, no doubt, in some degree attributable to the labour difficulties which existed in the early part of the season, but are chiefly in consequence of the late start made by the contractor in the spring, and the absence of a reasonable amount of energy on his part in pushing the work forward. The contract calls for the completion of the buildings on or before the 1st July, 1873, and engagements, respecting the future operations of the prison have been entered into, contemplating the entire completion of the workshops on that day. Unless the contractor increases the number of his mechanics and workmen to the fullest extent, and uses greater energy than he has shown in the past, the buildings will not be ready for occupation for an indefinite period, which may result in very considerable loss to the Province.

In the early part of the year I called the attention of the Honourable the Commissioner of Public Works to the necessity of deciding upon the industrial labour and trades that should be established in the prison. The necessity for an immediate decision upon this point arose out of circumstances to which I shall more fully refer hereafter; but chiefly from the fact that the extent of workshop space; its structural and internal arrangement; the amount of steam power required, and the furnishing of such workshops with the machinery and appliances requisite to carry on the industrial work proposed to be established, could only be decided upon when the nature and class of industrial labour were determined. Accordingly a contract was entered into on the 9th August, 1872, between the Government of Ontario and the Canada Car Company, of Toronto, through which the Government leased to the said Company, for the term of seven and a-half years, from the 1st January, 1874, the labour of all the prisoners sentenced to the Central Prison, excepting such as was required to carry on the domestic work of the prison.

This contract provides that prisoners shall not be sentenced to the prison for a shorter period than two months, and that they shall not, through physical or mental defects, be unfit to perform an ordinary day's labour, consisting of ten hours per day, less two hours every week. The Government is to furnish sufficient workshop space, (with foundations for machinery and other permanent fixtures), properly heated and lighted, to enable the industry to be carried on, and the boilers, engines and shafting required for motive purposes, not exceeding one hundred horses power—the engineers and firemen to be provided by the Company, as well as the fuel for the furnaces.

The Company is to employ the prison labour thus leased, in the manufacture of railway cars in all its various branches and requirements, as well as in the manufacture of nails, bolts, and spikes of every description. It is also provided that the Company may, with the consent of Government, establish other industries of a similar nature, and affording an equal variety of employment, with the use of the same kinds of machinery, tools and plant. The Company is to provide a sufficient number of instructors in the various branches of the industry, to instruct the prisoners and supervise their labour; and it may introduce into the prison workshops a certain number of ordinary skilled artizans and labourers for this purpose. The Company's officers, instructors, supervisors and employees, having the right of entry to the prison, to strictly comply with the rules, regulations and discipline of the prison.

For the prison labour thus leased, the Government is to receive from the Company the sum of fifty cents a day for each and every prisoner during the first two and a-half years' existence of the contract, for the second two and a-half years, fifty-five cents, and for the third and last two and a-half years, the sum of sixty cents per day.

There are several points in connection with this important transaction which call for explanation; and, first of all, the adoption of the contract system at all. In my report of last year I enumerated the various methods of utilizing prison labour, and expressed a decided preference for the system of exclusive Government control over that of the *ordinary* contract system. I am still of the conviction that, theoretically, the former is the best method of utilizing prison labour that can be adopted, and that the latter, as it has ordinarily been carried on heretofore, has been attended with many serious disadvantages. But I think it will appear, from a careful consideration of the terms and nature of the contract above described, that these disadvantages have been obviated. Under the working of the ordinary contract system, Government leases the labour of a certain number of prisoners without prescribing the kind of industry in which they shall be engaged; and in that case the usual consequence is that the moral reformation of the prisoners is to a great extent, if not altogether, ignored, the contractors having in view merely the pecuniary profit to be derived from their labour.

It is very obvious that such a contract system as this is open to very serious objection, but in the case of the contract now under consideration, this objection is entirely obviated, inasmuch as the industry to be engaged in *is strictly defined and approved by Government.*

That the Government was justified in this approval will be apparent from a moment's consideration of the nature of the work contemplated by the contract. The character of this industry is such that it affords appropriate employment for a greater variety of skill and capacity than any that could have been chosen. The manufacture of railway cars brings into play no less than eight distinct trades, viz., those of the carpenter, cabinet-maker, upholsterer, painter, blacksmith, machinist, moulder and founder; and, in addition, the contract provides for the manufacture of nails, bolts and spikes. All the work thus provided for the prisoners is of an elevating and educating character, and will afford an opportunity to each one engaged in it of learning some special handicraft by which he may afterwards gain a livelihood.

It is in fact the very kind of industry which the former Government had fixed upon as the most desirable and appropriate to the end in view, and the adoption of which I have myself, ever since the Central Prison scheme was devised, advocated in preference to any other.

When, in addition to the very desirable character of the industry provided by this contract, we consider the fair and just compensation that will be paid for the labour of the prisoners, and the fact that the entire management and discipline of the prison are retained by the Government, it must, I think, be conceded that every serious objection to the contract system has been obviated by the present arrangement, and that under it, this most difficult question of utilizing the prison labour has been as satisfactorily solved as it could have been under any other.

Another circumstance in the transaction requiring explanation, is the fact that this contract was closed at so early a day, and without having, by advertisement, previously invited public competition for the prison labour. What might seem the apparently premature conclusion of this arrangement has been already partially explained. The simple fact is that the work of planning and constructing the work-shops, and of furnishing them with the requisite machinery, could not have been entered upon before the real nature and extent of the prison industries had been decided upon. While this question was pending and pressing for a speedy settlement, an opportunity arose of leasing the labour of the prisoners for that special kind of industry which has all along seemed the most desirable. The Canada Car Company, whose premises adjoin those of the Central Prison, had recently been organized, and after lengthened negotiations, to which I shall refer hereafter, they signified their willingness to lease the labour of the Prison on the terms and for the purposes specified in the contract. Inasmuch as the Government thoroughly approved of the character of the work, and as, according to the arrangement under consideration, the Company were to furnish and place in the workshops all the necessary machinery—thus settling the pressing difficulty before referred to, and effecting a considerable saving in capital outlay—with the

approval of Government, and in accordance with the provisions of the Central Prison Act, I at once closed an agreement with them. So much for what might appear to be undue haste in the matter.

It still remains to explain why this contract was closed before public competition had been invited. A sufficient explanation of this point in the transaction will appear from a recital of the peculiar circumstances of the case. The late Government of the Province, as soon as the appropriation for the establishment of the Central Prison passed the Legislature, entered into negotiations with the Dominion Government for the acquisition of the property known as the Old Barracks, for a site for the Central Prison. This property, however, could not be obtained, as it belonged to that class of ordnance lands which could not be alienated from the Crown.

I therefore recommended that the prison should be erected upon the land purchased a short time previously from the Ordnance Department for the Toronto Asylum, provided that the full front between the Grand Trunk and Great Western Railways on Strachan Avenue could be secured. Part of this front had been reserved by the Dominion Government for additional space for the Emigration Depot, and the remainder was under lease to the Steel, Iron and Railway Works Company, for a term of years ending in 1880.

After lengthened negotiations with the Dominion Government, the whole of this front was purchased for the Central Prison. After this purchase had been made, it was represented to the Government of Ontario, by the President of the Steel, Iron and Railway Works Company, that that corporation had been merged into the Canada Car Company; that the latter had determined to carry on the manufacture of cars upon a large scale, that in order to carry out this determination they had decided upon the erection of expensive works on the property, then held by them under lease, but before doing so they desired to purchase or lease for a long period the land above referred to, as having been purchased by the Government of Ontario for the Central Prison; and that they had counted upon the privilege, ordinarily accorded to actual occupants, of being consulted before a sale or lease of the land they occupied had been made to another party. In view of this, the Car Company contended that their rights had not been fully respected, and claimed that they should have had a preemption right to the purchase of the land.

Without expressing any opinion as to the justice of the claims advanced by the Company, it is enough to state that this circumstance led to serious complications, and, inasmuch as the Company had a legal right to occupy the lands to 1880, this misunderstanding might have materially interfered with the interests of the Central Prison, owing to the proximity of the Company's premises to those of the prison.

The Government therefore thought it very desirable that this misunderstanding should be settled. As a means to its settlement, it occurred to me (as I suggested in a report submitted at the time,) that an arrangement might be entered into with the Company for the lease of the prisoners' labour, on terms equally advantageous to them and to the Government. The result of this suggestion was that the existing contract was made.

It must be remembered that this contract, although in a manner occasioned by the misunderstanding above described, was yet in itself quite as favourable as the Government, under any circumstances, could have expected to make. The kind of industry provided by it was, as has been shown, by far the most desirable that could be provided; and the rate of remuneration was far in advance of that received for the convict labour at the Dominion Penitentary, Kingston, notwithstanding the much shorter terms of sentence of the inmates of the Central Prison. This rate was in fact fully equal to that received by some of the oldest industrial prisons in the United States, and with a full prison was sufficient to render the establishment self-supporting. The proximity of the premises of the Car Company to those of the prison, which under other circumstances, as has already been shown, would have been a serious disadvantage, afforded an opportunity for the combination of ordinary skilled labour with that of the prison, which would enable the Company to offer a higher rate of remuneration than could be expected from any other similar establishment.

In view of all these facts, and the peculiar combination of circumstances attending them—that the industry was the most appropriate; that the rate to be received for the labour was as high as is paid on the continent; that the proximity of the Company's works to the Prison would be, under the arrangement, rendered desirable instead of de-

trimental ; and that the misunderstanding with the Company respecting the lands, would be amicably arranged—the contract was closed without first submitting the labour to public competition, which in ordinary cases and under ordinary circumstances would have been the proper course.

Although the arguments advanced against the utilization of prison labour for the purpose of carrying on *any class* of industry that is most suitable and desirable for that object, as being antagonistic to ordinary skilled labour, are founded on false and erroneous premises, and in many instances are unworthy of consideration ; still it may be observed that in the class of industry to be carried on in the Central Prison, such arguments have not the slightest force. The industry selected affords scope for no less than eight distinct trades, besides employing a large amount of ordinary unskilled labour. The division of these trades among the limited number of prisoners that will be committed to the prison, cannot under any circumstances be prejudicial to ordinary mechanics following the same trades, or to that particular branch of industry known as *car building*, which requires the services of various mechanical tradesmen. For it is not to be expected that all the prisoners who pass through the Central Prison will, when discharged, be occupied in car-building. Some will be carpenters, blacksmiths and foundrymen ; others will be painters, upholsterers and cabinet makers ; each man following and exercising the particular trade he may have acquired a knowledge of when in the prison. In this way they will all be absorbed into the various industries of the country, without materially affecting any particular trade. Had the manufacture of boots and shoes, furniture, or any industry requiring only one distinct trade, been adopted, then there might have been some ground for complaint from mechanics employed in these trades, but as it is there is none.

And when we consider that over twenty-five per cent. of the number of prisoners sentenced to the Common Gaols during the past year were mechanics of various kinds, many of them workers in iron, wood and metals, who if not in prison would have been all engaged in their respective trades, the objections raised against the utilization of prison labour in the manner proposed are utterly groundless.

Now that the most important, and at the same time most difficult problem, in connection with the Central Prison scheme has been so satisfactorily solved by the provision of appropriate and remunerative employment for every prisoner sentenced to it, the next most important question that presents itself for settlement is what class of prisoners shall be sentenced to the Prison? To determine this, we must first ascertain the number of male prisoners now sentenced to the Common Gaols of the Province, and the periods of their sentence—all of which information is given in the following table :—

NAME OF GAOL.	Number of Men sentenced to Gaols for the year ending 30th Sept., 1872.	Periods of Sentence.									
		30 Days and under.	For one month and up to two months.	For two months and up to three months.	For three months and up to four months.	For four months and up to five months.	For five months and up to six months.	For six months and up to one year.	For one year to any period under two years.	No. sentenced to the Common Gaol for 2 years.	No. sentenced to the Penitentiary for 2 years.
Brantford	133	65	49	17	2	.....	.....	.....	.....	.....	.....
Barrie	113	90	13	5	1	.....	4	.....	.....	.....	.....
Berlin	13	8	3	2	.....	.....	.....	.....	.....	.....	.....
Brampton	44	33	4	3	2	1	1	.....	.....	.....	.....
Brockville	73	49	12	10	1	1	.....	.....	.....	.....	4
Belleville	76	50	19	3	3	.....	.....	1	.....	.....	.....
Cayuga	28	21	5	2	.....	.....	.....	.....	.....	.....	1
Cornwall	23	19	1	1	1	1	.....	.....	.....	.....	.....
Carried forward											

Mumber of Male prisoners, &c.—*Continued.*

NAME OF GAOL.	Number of Men sentenced to Gaols for the year ending 30th Sept., 1872.	Periods of Sentence.									
		30 Days and under.	For one month and up to two months.	For two months and up to three months.	For three months and up to four months.	For four months and up to five months.	For five months and up to six months.	For six months and up to one year.	For one year to any period under two years.	No. sentenced to the Common Gaol for 2 years.	No. sentenced to the Penitentiary for 2 years.
Brought forward											
Cobourg	8	.....	2	.....	3	.....	3	.....	.....	.....	6
Chatham	80	45	12	11	7	.....	.....	4	1	.....	3
Goderich	19	3	8	7	1	.....	.....	.....	.....	.....	.....
Guelph	49	28	16	.....	.....	.....	4	.....	.....	1	.....
Hamilton	516	215	239	34	12	5	11	.....	.....	.....	1
Kingston	171	73	89	5	1	1	2	.....	.....	.....	.....
London	137	55	31	30	11	2	.....	3	5	.....	2
Lindsay	36	21	10	4	.....	.....	1	.....	.....	.....	1
L'Orignal	5	2	3	.....	.....	.....	.....	.....	.....	.....	.....
Milton	7	1	1	4	1	.....	.....	.....	.....	.....	.....
Napanee	25	6	16	.....	2	.....	1	.....	.....	.....	2
Ottawa	219	174	22	15	5	2	.....	1	.....	.....	.....
Owen Sound	34	18	.....	12	2	.....	1	1	.....	.....	1
Perth	19	13	6	.....	.....	.....	.....	.....	.....	.....	.....
Picton	8	3	5	.....	.....	.....	.....	.....	.....	.....	.....
Pembroke	35	3	27	5	.....	.....	.....	.....	.....	.....	.....
Peterboro'	48	26	17	3	1	1	.....	.....	.....	.....	4
Simcoe	38	26	4	7	1	.....	.....	.....	.....	.....	.....
St. Catharines	79	19	26	24	5	3	.....	2	.....	.....	2
Sarnia	59	39	8	6	3	1	.....	1	1	.....	.....
Stratford	31	13	9	4	1	.....	3	1	.....	.....	2
Sandwich	107	57	26	17	1	.....	2	1	3	.....	2
St. Thomas	10	.....	5	4	.....	.....	1	.....	.....	.....	.....
Sault Ste. Marie	11	1	10	.....	.....	.....	.....	.....	.....	.....	10
Toronto	828	321	363	77	24	8	.....	32	3	.....	.....
Walkerton	10	2	5	1	1	.....	.....	.....	1	.....	.....
Woodstock	26	13	5	3	2	1	1	1	.....	.....	.....
Welland	92	82	4	1	2	.....	2	.....	1	.....	.....
Whitby	35	19	7	4	3	2	.....	.....	.....	.....	.....
	3245	1613	1082	321	99	29	37	48	15	1	52

Accepting the statistics above given, respecting the number of prisoners sentenced to gaols, and their periods of sentence, as a standard for our future guidance, we find that 3,245 prisoners were sentenced to all the gaols of the Province for the year ending 30th September. No less than 2,695 of these prisoners were sentenced for periods under *two months*, and who under the terms of the contract entered into with the Car Company, would not be eligible to be sent to the Central Prison. The number sentenced for periods over two months was 553, in addition to which number, 52 were sentenced to the Provincial Penitentiary for two years, making 605 prisoners who would—as respects period of sentence—be proper subjects for the Central Prison.

But when we consider that, of the 2,695 prisoners committed for terms under two months, fully one-third of them were sentenced from twice up to six times during the year, and who, if a properly organized industrial prison had been in operation would, *or at any rate should*, have been sentenced for periods varying from two to twelve months—it will at once be seen that in place of having only 605 prisoners to select from for transfer to the Central Prison, there would have been upwards of 1500.

I have frequently reported upon the desirability of sentencing such prisoners for longer periods, in order that the requisite means may be used, and influences exercised

for their reformation, which, under the present system of sentencing for short peiords, cannot be done.

If however, we look at the matter from the ground of public economy, it will be seen in a moment that after the second or third re-committal of such prisoners, and when the line has been crossed that separates the real criminal or habitual offender from the first crime or the accidental offence, that such men become a constant charge upon the public funds. Not only is this the case in respect of their support when in gaol, but the expense of *repeated* trials becomes a very serious charge upon the criminal administration fund. I have little doubt, that if the expenditures of the past year, for criminal prosecutions in all its branches in respect of Courts, Queen's Counsel, Juries, and all the other sources of criminal expenditure, were carefully analyzed, that it would be found that nearly, if not quite half the amount was expended for the trial and conviction of *habitual* criminals and offenders. And in estimating the good that an industrial prison will accomplish, or the saving that it will effect in the utilization of prison labour, it is proper and right that this should be taken into consideration.

Besides the habitual offenders above referred to, there is another class, and not an insignificant one either in point of numbers, many of whom composing it would be proper subjects for this prison. During the past year one hundred and twenty-four persons were sent to gaol for want of sureties to keep the peace : an examination into the nature of the breaches for which they were required to find sureties, shews that the largest proportion were husbands who had been committed for beating their wives. In nearly every case, an offence of this kind merits more severe punishment than being permitted to lounge, sometimes for months, in utter idleness in the corridors of a c ommon gaol, until a general gaol delivery sets him free. I therefore think that a good many of this class should be sent to the Central Prison.

An additional reason is furnished why a greater number of prisoners now sentenced for short periods to the gaols, should be sent to the Central Prison, in the nature of the callings or occupations of such prisoners. We find on an examination of the gaol statis tics of the past year, that the following trades were represented in the persons of the prisoners committed :—

Workers in Iron, Brass, &c.

Blacksmiths	82	
Moulders	67	
Machinists	65	
Plumbers	6	
Tinsmiths	21	
		241

Workers in Wood.

Carpenters and Joiners	193	
Cabinet Makers	18	
Carriage and Waggon Makers	20	
Coopers	30	
Millwrights	5	
Woodturners and Wheelwrights	7	
Ship Carpenters	13	
		286

Other Trades.

Broom, Basket and Brush Makers	14
Brickmakers and Bricklayers ; Stone Masons, Stone Cutters and Plasterers	129
Boot and Shoe Makers	173
Harness Makers	22

Painters	90	
Printers	41	
Tailors	90	
		559
		1086

In addition to the trades above enumerated, upwards of five hundred other prisoners were possessed of a sufficient amount of intelligence and ingenuity, although not mechanics, to have rendered themselves useful in shops and yards of the kind that it is proposed to establish in the Central Prison.

Altogether it is perfectly safe to say that there were not less than 1500 sentenced prisoners, who passed through the Common Gaols of the Province during the past year, who would have been proper subjects, in all respects, for sentence to an industrial prison.

Respecting the mode of commitment to the Central Prison, there are two methods pointed out in the Central Prison Act.

Section 15 provides that every Court of Criminal Jurisdiction in the Province, before whom any person shall be convicted of an offence punishable by imprisonment in the Common Gaol may, after the Central Prison is opened, sentence such offender to imprisonment in it, instead of the Common Gaol of the County where the offence was committed or tried. And Section 16 provides that every person convicted before one or more Justices of the Peace, or by a Police Magistrate, of any offence cognizable by Justices or Police Magistrates, and for which punishment by imprisonment in the Common Gaol may be awarded for any period not less than fourteen days, and committed to a Common Gaol for such conviction, may be removed and transferred by order of the Provincial Secretary from such Common Gaol to the Central Prison, and there be imprisoned for the unexpired portion of his sentence to the Central Prison, instead of the Common Gaol of the County.

Having regard, therefore, to the fact that the contract entered into with the Canada Car Company requires that prisoners shall not be sentenced to the Prison for less periods than two months, and that the Prison itself is eminently an *industrial establishment*, it is clear that the law must be amended to conform with these provisions. Men committed to the Central Prison must be able to perform an ordinary day's work, and those who are temporarily incapacitated for this should remain in the Common Gaol until they are able to work. In fact Common Gaols must act as *feeders* to the Central Prison.

To accomplish this I would respectfully recommend—

1st. That the law be amended to enable, in certain cases, persons now committed to the Common Gaols for want of sureties to keep the peace, to be transferred to the Central Prison.

2nd. That the 15th section of the Central Prison Act be amended to provide that before a prisoner is sentenced to the Central Prison from any Court of Criminal Jurisdiction in the Province, such prisoner shall be certified by the gaol surgeon, to the satisfaction of the judge, to be able to perform an ordinary day's work.

It will also be necessary to devise some cheap but prompt method of transferring prisoners from the Common Gaols to the Central Prison, either by the appointment of an officer to be attached to the prison staff, whose duty it shall be to effect the transfer, or by the means now used for that purpose, at reduced rates of compensation to the local officials performing that service.

Buildings.

Some alterations from the original design of the workshops were found to be necessary, as soon as the class of industry had been determined. The extent of workshop space was, however, fixed by the requirements of similar industrial establishments, both in this country and the United States.

Instead of a warehouse for manufactured goods, which the specifications called for, a foundry has been erected at considerable additional expense. It will be necessary to place in this building all the fixtures required for such a shop, such as cupolas, furnaces, hoists, &c.

The second floor of the south workshop has been left out, although provision is made for replacing it at any time that it may be found necessary to do so.

In addition to these alterations, the following additional work will require to be done :—

1st. The extension of the yard walls to the west 400 feet, so as to obtain the requisite amount of yard space. This yard will require to be subdivided by a wall so as to separate the ordinary working yard from that used for lumber and material ; which otherwise might be used by the prisoners to effect escapes.

2nd. The construction of railways to the work-shops from the main railway lines, passing the prison grounds, with the necessary sidings, turn-tables, &c.

3rd. The construction of a picket fence to surround the prison lot, and the completion of the levelling and filling in of the same.

4th. In view of the small additional cost that another tier of cells could be provided for under the same roof, that would furnish additional cell space for eighty prisoners, which if not all required at present, certainly will be in the future, I would recommend that that addition be made to the two dormitory wings.

PROVINCIAL REFORMATORY.

PENETANGUISHENE.

During the past year forty-eight youths were committed to this Institution, which is the same number that was sent to it the preceding twelve months. These forty-eight lads were, with eight exceptions, sentenced to the Reformatory from the Interim Sessions Courts of the Province, and were received from the following Counties:—

Brant	1	Lambton	5	Stormont, Dundas, and Glengarry	2
Carleton	3	Leeds and Grenville	4	Welland	2
Elgin	2	Middlesex	5	Wentworth	3
Frontenac	3	Norfolk	2	Waterloo	1
Haldimand	1	Ontario	6	York and Toronto	5
Lincoln	2	Oxford	1		
					48

The operations of the Reformatory for the past year were as follows:—

Inmates remaining in custody on 1st Oct., 1871	155	
Admitted during the year	48	
		203

DEPARTURES.

Discharged on expiration of sentence	40	
Pardoned	3	
Escaped	2	45
Remaining in custody on the 30th Sept., 1872		158

The Gaol statistics attached to this Report, shew that 281 lads, under sixteen years of age, were committed to the thirty-seven common gaols of the Province during the past year; how many of these were acquitted of the offences with which they were charged when brought to trial, I have no means of knowing: but that only *seventeen* per cent of the number should have been sent to the Institution founded expressly for juvenile offenders, would indicate the existence, only, of a very qualified appreciation of the benefits and advantages to be derived from its establishment. The very title of the Statute providing for the establishment of this Reformatory is calculated to give a false and erroneous impression of its aims; and judges may well ponder before sending *youths between nine and twelve years of age to a "Prison for young offenders."*

Perhaps another reason is furnished for the Institution not being availed of as much as could be desired, in the character of the buildings themselves. While, for the inmates more advanced in years, it may, and in fact is necessary to have cells, iron bars, and all the other prison appliances to insure safe custody, it is doubtful if any good end is served by placing a youth below twelve years, under such restraint, and amidst such surroundings.

It is all very well to say that this is a Reformatory and an Industrial School ,and not a Prison, but so long as the present Act styling it a *prison* remains on the statute book, and both its external and internal construction bears that designation out, it will be rather difficult to convince either judges or the public to the contrary.

I have always been of opinion that the sentencing of lads under twelve years of age to this Institution was wrong in principle, and when we consider that many are committed to it under that age, and for periods not exceeding two years, then I believe that in many instances an injury is done to such youths. For juvenile offenders of that

age, I believe that Industrial Schools, established in cities would accomplish far better results and more lasting benefits than commitment to a Reformatory of this kind. Not only for juvenile offenders, or those youths who have committed some act rendering them amenable to the law, would Industrial Schools be the proper place, but for that army of children known as "Homeless and Destitute," "Neglected and Abandoned." "Orphans and Vagrants," they would be an invaluable boon.

Unless a lad has committed some grave offence against the laws, he should not, in my opinion, be sent to this Reformatory, and in any case he should not be sent unless over twelve years of age.

The practice of sentencing youths to this Institution for fixed periods instead of *until reformed*, is another serious obstacle to the attainment of greater advantages from an establishment of this kind. In dealing with this feature of the subject in my Report of 1869, I used the following words, "Looking upon this Institution as a Reformatory "and Industrial School, rather than a place of compulsory detention for criminals, and "believing that in giving effect to this, no boy should be detained in custody a day after "the object of his detention is accomplished, I am strongly of opinion that the law in "this respect should be changed to admit of all youths convicted of crime being sent to "the Reformatory for indefinite periods, but in no case to exceed five years, the length "of confinement to be determined by the general conduct of the lad, his habits of in-"dustry, proficiency at school, and the general evidences of reformation that he exhibits."

However necessary or desirable it may be to have the pardoning power vested in the Dominion Government, in respect of prisoners committed to penal establishments: that it should be extended to Juvenile Reformatories, placed exclusively under the control and management of the Provincial Government, appears to me to be rather anomalous, and precludes the adoption of the method of discharge above indicated. Having regard to the existence of these anomalies and defects in the working of the Institution, I am of opinion that they will have to be corrected before this Reformatory can fully perform the objects aimed at in its establishment.

Employment

The question of industrial employment for the youths committed to this Reformatory has always been an important one, but in consequence of the many difficulties surrounding it in the past, owing to the unfortunate location of the Institution, and in some measure to the extreme youth of the great majority of the lads sentenced to it, a satisfactory settlement of the question could not be arrived at.

During the past year, however, an opportunity presented itself in an offer to lease the labour of a considerable number of the inmates for the purpose of manufacturing cigars, which with the approval of the Government I accepted. While there are, undoubtedly, more desirable and appropriate trades than cigar making, I do not think that any very strong moral objections can be urged against its adoption. As smoking is a practice in which the very best people indulge, I cannot see why their manufacture should be prohibited in the Reformatory. The trade is one that can very easily be acquired by youths, and in many respects is peculiarly adapted for an establishment of this kind. It affords light and clean work, and as in the various stages of manufacture a variety of capacity and skill are required, employment will be provided for every lad sentenced to the Reformatory.

On enquiry I found that the demand for the labour of skilled cigar makers was very great, with only a very limited supply. The wages derived from the trade range from four to fifteen dollars a week. There is little doubt, therefore, that when boys are discharged from the Reformatory, constant and remunerative employment, in connection with this branch of industry, can always be got. In view of the inducements thus offered, taken in connection with the difficulties arising out of the location of the Reformatory, which rendered it very doubtful if any branch of industry could be carried on without loss, let alone proving remunerative, with the approval of the Government I concluded a contract, leasing the labour of a number of the boys sentenced to the Reformatory.

While, undoubtedly, in a Juvenile Reformatory it would have been more desirable for the Government to have carried on the industrial employmen tinstead of contractors, still when the Government had to choose between idleness and sloth in the Reformatory, and the adoption of a trade to which some objections might be raised, I had no hesitation in recommending the latter course.

The contract provides that the Government shall lease to the contractors, for the term of seven years, the labour of a number of the inmates not exceeding one hundred, commencing on the 1st January, 1873. That such contractors shall take all the boys committed to the prison under thirteen years of age; all youths over that age to be divided between the said manufacture of cigars and the other industrial trades, now being carried on in the establishment.

During the first year, and while the shop work is being organized, the full number is not to be placed at work, but on the beginning of the second year not less than eighty boys are to be constantly employed and paid for by the contractors, during the continuance of the contract. The said contractors are to pay to the Government for the labour of the boys employed, the following rates per day, consisting of seven hours, viz., for the first year's service of each boy, at the rate of fifteen cents per day; for the second year, twenty cents per day; for the third year, twenty-five cents per day; for the fourth year, thirty-five cents per day; for the fifth year, forty cents per day.

In addition to the amounts thus specified to be paid to the Government for the labour of the boys thus leased, the contractors have also to pay, in order to encourage and reward industry and good behaviour, to be funded for the benefit of the boys engaged in such labour, and paid to them when discharged from the reformatory, the following rates per day: for the second year's service, three cents per day; for the third year's service, four cents; for the fourth year's service, five cents; and for the fifth year's service, six cents per day, as a bonus to each boy engaged at the trade. The certificate disentitling any boy to such bonus must be made within a week.

Any labour performed by any boy over the allotted seven hours a day, to be paid for as extra labour, and at the same rates both as to general and bonus payments.

All moneys due by said contractors to the Government to be paid into the credit of the Treasurer every month.

In connection with the contract above recited, it must be remarked in explanation that the period of sentence to the reformatory in no case exceeds five years, and that the rates per day for the labour of the inmates are fixed according to the length of time the youth serves at the trade. If the lad has been industrious and well behaved, and has served five years continuously in the cigar shop, he will, under the terms of the contract, have upwards of fifty dollars at his credit to commence the world with when he is discharged from the reformatory.

As the day's work under the contract is limited to seven hours, the education of the boys allotted to the manufacture of cigars will not be interfered with, and the school hours will remain as at present.

Inspection Minutes.

Statutory inspection was made of the Reformatory in the month of July, when the following minutes of inspection and instruction were entered in the inspection book.

"The undersigned, having completed the inspection of this Institution, records the following inspection minutes and instructions":—

"Was present on the morning of the 11th at roll call, when I saw every inmate of the Reformatory, which that day consisted of 151 boys."

"Only 138 boys numbered off in the ranks, the remainder being engaged in the kitchen, bakery, stables and other places; there were also absentees from the evening muster. In future the Warden will see that every lad in the Reformatory (except such as are on the sick list, and those under punishment by confinement to the cells) is present at the night muster. Was present at every meal served during my visit; the conduct of the inmates, and the good order that prevailed on these occasions were all that could be desired."

"The dietaries were of good quality and abundant—breakfast consisting of bread and coffee, dinner of soup, meat, potatoes and bread, and supper of mush and molasses; the quantity of mush served to each boy at supper, appeared to be more than was required, as in most cases half of it was left."

"The dining room, kitchen, bakery, and store-rooms in the basement of the centre building, were in a very fair state of order, but the area enclosure at the kitchen door was neither in a clean nor orderly state. The rear cell dormitory and the associated sleeping ward were inspected. Owing to the hoisting pulleys of some of the windows in the rear dormitory being broken, all the windows could not be lowered, in consequence of which some of the upper cells were not properly aired. The Warden will instruct the carpenter to place every window in the dormitory in good working order at once. The strawbeds being very musty and much packed, require a change of straw; the Warden states that there is great difficulty in procuring a supply, but steps must be taken to overcome this difficulty."

"No sheets were found on any of the beds, as they had all been removed to get washed and there were not sufficient in stock for a change, the storekeeper was instructed to serve out what there were, and to prepare a requisition for sufficient material to enable a change to be had. The dormitories were in a fair state of cleanliness and order, it is, however, very important that the associated dormitory for the younger lads should be abandoned, and the separate cell wing dormitories taken possession of. To enable this to be done as early as possible, the carpenter must proceed at once with the flooring of the cells, hanging the cell doors, and in completing the carpenter work generally If any lumber is required for this purpose the Warden will give an order for it."

"The several shops were inspected, and the work in each examined.

"The blacksmith's shop had only four boys engaged in it. Since the dismissal of the keeper and instructor, a journeyman blacksmith has been in charge, it is however very desirable that a permanent appointment should be made as soon as possible. The journeyman and boys were engaged in making the gratings to place over the cell doors in the Central Prison.

"The carpenter's shop was also visited, in which nine boys were engaged; the work turned out by this shop for the Brantford Institute was of the worst kind, both in respect to material and workmanship, the desk stools being quite worthless, and the bedsteads very little better. The Warden will inform the master carpenter of this, and state to him that his carelessness in this instance will cause considerable loss to the Institution, and at the same time bring discredit upon the shop."

"The Warden will instruct the carpenter to make a careful estimate of the carpenter work done on the new dormitory, including the material used, and the book-keeper will make out a bill of the same against the Province."

"The management of the cooper's shop has much improved, and the amount of work manufactured in it has considerably increased. There were at my visit ten boys employed in this shop. In addition to the articles made for the Central Prison, a large number of pork barrels, kegs, churns, &c., are now on hand ready for sale, which it would be well to dispose of as soon as possible. The Warden will instruct the master cooper to proceed with making sixty night buckets for the Central Prison, in addition to what has already been made."

"The tailor shop had twenty-one boys in it, although very few of them were fully employed; the winter clothing has not yet been made. A requisition for the cloth and other articles required for this shop should at once be sent in."

"There were thirteen boys at work in the shoe-shop making and repairing to supply the wants of the Reformatory. The master shoemaker complains that the boys sent to his shop are too young for the trade."

"A large number of little boys are still almost unemployed—a state of things which, more than anything else, prevents the full accomplishment of the design of this Institution. It is therefore to be hoped that the proposition made for the employment of about eighty of this class will receive the sanction and approval of Government, so that the proposed mechanical industry may be commenced at the earliest day possible. The land and outbuildings were visited and found in good order; another field has been cleared of boulders, with which a new wharf has been made. I visited and examined the schools

during their afternoon Session. Considerable improvement was observable in some of the classes, but it is very clear that a proper system of instruction cannot be carried on without properly qualified schoolmasters being attached to each school, and a greater length of time devoted to education."

Since my last visit to the Institution, attempts at escape have not been so prevalent. Only two boys have succeeded in getting off; the circumstances of which escape are reported to be as follows. Brant, who was under sentence for five years, and had only two months of the period to run, received a permit from the Steward to go outside the enclosure, on receiving which he added to the permit the name of Gibson, who had been only a short time in the Reformatory and had received four years' sentence. The forged permit was received by the gate-keeper, when both of the prisoners immediately made their escape from the grounds, and although every effort has been made to capture them they are still at large. From the fact that Brant had only two months of a five years' sentence to run, and that during the whole period of confinement he had behaved in a very exemplary way, it was very natural and right that the Warden should have placed confidence in him. The forgery of Gibson's name to the permit, however, affords a lesson that cannot be overlooked. To guard against such an occurrence happening again, the right of granting leave to inmates to go outside of the enclosure, without being in charge of a keeper, must in future be confined to the Warden, or in his absence to the Deputy-Warden.

The health of the Institution has been unusually good—indeed it would appear from the Surgeon's register that hardly a case of sickness has occurred since my last visit.

A lad, who was found in the Gaol at Peterboro', having been committed for an attempt at arson, was, on examination found to be deranged in mind and possessed of a mania to fire property. It was thought that the discipline of this Institution would improve him, and perhaps fit him to be placed at liberty in a short time. His transfer from the Peterboro' Gaol to the Reformatory was therefore recommended and took place. As he had been in the Reformatory for nearly three years without the slightest improvement, either mental or moral, having exhibited itself; and as imbecility of mind, if not idiotcy, was apparent, his detention in the Reformatory for a longer period would have been detrimental to the discipline of the Institution. His removal to the Idiot Asylum was recommended and took place.

The accounts of the Institution were audited from the 1st July, 1871 to the 30th June last, and having compared the entries in the several books with the accounts and vouchers produced by the Book-keeper, the whole were found correct.

The Accounts for the year are herewith appended, shewing the Expenditure for the twelve months ending 30th September, to have been $22,494 14. The cash receipts from the labour of the inmates for the same period was $2,564 87, so that the cost to the Province of maintaining the Reformatory for the year, was $19,929 27- I herewith transmit estimate of Expenditure for the year 1873, amounting to $21,792.

The Province of Ontario in account with the Provincial Reformatory, from 1st October, 1871, to 30th September, 1872, inclusive.

Dr.			Cr.		
	$ cts.	$ cts.		$ cts.	$ cts.
To Amount Revenue to Credit of Treasurer, Province of Ontario		2,564 87	By Balance		97 61
" Salary account	9,884 26		" Warrants	22,452 00	
" Victualling account	5,878 51		" " Cash	6 74	
" Clothing, $3,080 49, and Bedding, account, $62 84	3,143 33				22,458 83
" Farm account, $401 34, Stables account $115 95	517 29		*Revenue.*		
" Freight account	281 62		Farm Account	179 35	
" Furniture, $207 23, Tools, $182 93, Shop fixtures, $11 60	401 76		Shoe Shop "	119 15	
" Soap, $55 20, Light, $227 79, and cleaning, $42 75	325 74		Cooperage "	349 88	
" Chapels and School account	359 05		Tailor Shop "	23 58	
" Ordinary repairs "	567 13		Labour "	24 12	
" Hospital "	80 49		Garden "	32 65	
" Incidentals "	174 40		Blacksmith "	1,254 15	
" Postage, $75 04, and Stationery, $58 53	133 57		Carpenter Shop "	297 46	
" New construction account	27 04		Victualling "	135 60	
" Maintenance "	107 81		Light "	14 04	
" Convict Travelling Allowance	332 00		Cleaning "	1 11	
" Officers' Travelling Expenses	155 17		Furniture "	0 75	
" Rent account	90 00		Soap "	5 60	
" Garden "	17 47		Bedding "	17 76	
" Fuel "	17 50		Fuel "	3 75	
		22,494 14	Maintenance "	98 81	
" Balance		62 30	Clothing "	7 11	
		25,121 31			2,564 87
					25,121 31
			By Balance		62 30

ESTIMATE OF EXPENDITURE FOR THE PROVINCIAL REFORMATORY FOR THE YEAR 1873:

Salaries: Warden	$1,600 00		
2 Chaplains, at $800	$1,600 00		
Deputy Warden, Clerk and Storekeeper	850 00		
Surgeon	400 00		
Steward	400 00		
5 Keepers, who combine duties of trade instructors, at $400	2,000 00		
4 Ordinary Keepers, at $360	1,440 00		
Farmer	400 00		
Stable Keeper	260 00		
Gardener	260 00		
Gatekeeper	260 00		
2 Night Guards, at $260	520 00		
Temporary Assistance	200 00		
		10,19000	
Rations	5,000 00		
Clothing, $2,800, and Bedding, $500	3,300 00		
Farm, Farm Stock, and Stables	600 00		
Hospital	150 00		
Chapels and School House	200 00		
Soap, Cleaning and Light	250 00		
Furniture, Tools and Shop Fixtures	750 00		
Ordinary Repairs	500 00		
Convicts' Travelling Allowance, 44 at $8	352 00		
Officers' Travelling Expenses	100 00		
Postage, Stationery, and Incidentals	400 00		
		11,602 00	
		$21,792 00	

COUNTY GAOLS.

The tables of statistics attached to this Report shew that 6,958 prisoners passed through the thirty-seven common gaols of the Province for the year ending 30th September, of whom 5,287 were males, and 1,671 females. These figures indicate an increase of 343 prisoners, or a little above five per cent over the commitments of the previous year.

An examination of the gaol statistics for the past three years, shews that the increase in commitments to our gaols has been singularly uniform and steady, as follows :—

	Males.	Females.	Total.
Number of Commitments for 1869-70	4,534	1,845	6,379
" " for 1870-71	4,915	1,700	6,615
" " for 1871-72	5,287	1,671	6,958

It would appear, however, from these figures, that this increase has been confined to males, and that the number of females committed to prison has slightly decreased every year during the period named. The gaols at Toronto, Hamilton and Kingston have been the chief contributors this year to the excess in commitments : those in the rural districts generally shew a decrease. From my observations at statutory visits, I am inclined to believe that we are receiving more of the criminal population of England, Ireland and Scotland, than we could wish for, although perhaps not a greater proportion than the flow of emigration would lead us to expect.

Perhaps the worst feature brought to light by these criminal statistics is the great increase in the number of re-committals, this year numbering 2,354, or very nearly one-third of the gross commitments. Of this number 988 were committed twice, 448 three times, and 918 were sent to gaol from four up to six times during the year. To state this fact is simply to reiterate the conviction long ago arrived at, that our common gaols are utterly inadequate either to punish or reform habitual offenders against the laws, but rather tend to the spread of crime and the development of criminals.

It is satisfactory to note that there is a slight decrease in the number of juvenile offenders of both sexes, the commitments this year stand at 337 against 387 of that class during the previous year.

The nationalities of prisoners are given in the following summary :—

Born in Canada	2,563
" England	1,188
" Ireland	2,138
" Scotland	504
" United States	396
" Other Countries	169
	6,958

The religious persuasions are returned as follows :—

Roman Catholics	2,542
Church of England	2,413
Methodist	870
Presbyterian	789
Other denominations	344
	6,958

That the social state of the subject has an important bearing upon the morals of a community is very conclusively shewn from the fact that of the 6,958 prisoners committed, only 2,405, or 34·58 per cent were married, while 4,553, or 65·42 per cent were unmarried.

That *one-fourth* of the prisoners committed during the year could neither read nor write, and that *three-fifths* were, by their own acknowledgment, intemperate in their habits, prove beyond a doubt that in this as in other countries ignorance and drunkenness go hand in hand with vice and crime.

While commitment to a common gaol is a fearful penalty for occasional or accidental drunkenness involving as it does loss of character and deep degradation ; to the habitual drunkard, confinement in a gaol for a short period is as wholly inadequate for punishment, as it is insufficient for reformation.

The number of prisoners in confinement in the thirty-seven common gaols, on the night of the 30th September, is given in the following table :—

TABLE showing the total number of Prisoners in the several Gaols of the Province on the evening of the 30th September, 1872.

NAME OF GAOL.	NUMBER AND CLASSIFICATION OF PRISONERS.			
	Men.	Women.	Youths under 16.	Total.
Brantford	8	9	2	19
Barrie	10	5	2	17
Berlin	3			3
Brampton	8			8
Brockville	12	4	1	17
Belleville	5		3	8
Cayuga	3			3
Cornwall	4	1		5
Cobourg	8	9		17
Chatham	8		1	9
Goderich	3	3		6
Guelph	14	2	2	18
Hamilton	53	35	3	91
Kingston	18	10		28
London	21	10		31
Lindsay	9	1		10
L'Orignal				
Milton	4			4
Napanee	4	1		5
Ottawa	16	8	1	25
Owen Sound	8	3		11
Perth	4	1		5
Picton	1		1	2
Pembroke	10			10
Peterboro'	9	8		17
Simcoe	5		1	6
St. Catharines	16	2	4	22
Sarnia	7	1		8
Stratford	1	3		4
Sandwich	17	2		19
St. Thomas	5			5
Sault Ste. Marie				
Toronto	49	53	6	108
Walkerton	3	3	2	8
Woodstock	4	1		5
Welland	7	1	1	9
Whitby	4	5		9
	361	181	30	572

From the above table it would appear that there were 572 prisoners in custody at the

close of the official year (30th Sept.) The nature of the imprisonment of these 572 persons was as follows:—

Waiting trial	82
Default of bail or want of sureties to keep the peace	28
Insane, idiotic, or imbecile persons	46
Under sentence	416
	572

The number of prisoners waiting trial in Gaols has been very much reduced in consequence of the operations of the Interim Sessions Courts, through which prisoners, who thus elect, may at once be tried before the County Judge, without a Jury. During the past year six hundred and twenty-five prisoners elected to be tried in this manner, whose cases were disposed of as follows:—

Acquitted	159
Found guilty and sentenced to gaol	364
" " " to the Penitentiary	62
" " " to the Reformatory	40
	625

It would appear from these figures that a little over twenty-five per cent of the number of prisoners who were tried at the Interim Sessions Courts, were acquitted of the offences for which they were committed to prison, and during the previous year over twenty-nine per cent of the persons tried by the same Courts were acquitted of the crimes for which they were arraigned.

I am not aware what proportion of prisoners charged with crime are acquitted when tried by juries, but it is fair to presume that *really* innocent persons charged with offences coming within the jurisdiction of the Interim Sessions Courts, prefer their prompt and speedy procedure in preference to long confinement in gaol, and trial by jury. It is also worthy of note that of the 48 juvenile offenders sent to the Reformatory of Penetanguishene, no less than forty were sentenced from the Interim Sessions Courts.

The following table shews the number of *sentenced* prisoners as distinguished from those who were committed for trial, or were merely detained in Gaol for various causes:—

TABLE showing the total number of Prisoners that were sentenced to the Reformatory Penitentiary or Gaols of the Province, for the year ending 30th September, 1872.

NAME OF GAOL.	NUMBER AND CLASSIFICATION OF PRISONERS SENTENCED.					
	Men.	Women.	Total.	Penitentiary.	Reformatory	Gaol.
Brantford	135	75	210	1	1	208
Barrie	111	13	124			124
Berlin	13	10	23	7	1	15
Brampton	44	2	46			46
Brockville	77	14	91	4	3	84
Belleville	76	27	103	4	3	96
Cayuga	29	2	31	1		30
Cornwall	20	5	25		2	23
Cobourg	14	3	17	6		11
Chatham	84	9	93	5		88
Goderich	20	1	21	1		20
Guelph	53	7	60	4		56
Hamilton	525	292	817	3	3	811
Kingston	173	119	292	5	3	284
London	145	61	206	2	5	199
Lindsay	39	5	44	4		40

NAME OF GAOL.	Number and Classification of Prisoners Sentenced.					
	Men.	Women.	Total.	Penitentia'y.	Reformatory	Gaol
L'Orignal	7	.....	7	2	.....	5
Milton	11	.....	11	2	.....	9
Napanee	27	7	34	2	1	31
Ottawa	224	75	299	4	3	292
Owen Sound	36	5	41	1	.....	40
Perth	20	.....	20	1	.....	19
Picton	10	2	12	2	.....	10
Pembroke	51	2	53	.....	.....	53
Peterboro'	61	21	82	2	.....	80
Simcoe	42	6	48	5	2	41
St. Catharines	82	26	108	3	3	102
Sarnia	68	4	72	4	5	63
Stratford	31	3	34	.....	.....	34
Sandwich	111	44	155	4	.....	151
St. Thomas	15	.....	15	4	2	9
Sault Ste. Marie	11	.....	11	.....	.....	19
Toronto	854	371	1225	14	4	1199
Walkerton	10	2	12	.....	.....	12
Woodstock	33	3	36	4	1	31
Welland	96	7	103	1	3	99
Whitby	41	21	62	1	6	55
	3399	1244	4643	103	51	4489

As 6958 persons were committed to the Gaols during the year, it would appear from an examination of the above table that 2315 of the number cannot properly be classed as criminals or even offenders against the laws. Of this number the largest proportion were acquitted of the charges preferred against them when brought to trial, while about 500 were committed as insane, debtors, or for want of sureties, &c., &c.

Of the 4643 prisoners who were sentenced, 103 were sent to the Penitentiary, 51 to the Reformatory, and 4489 to the Common Gaol.

The following table shews the number of prisoners maintained in Gaols by municipalities, and by Government, and the number of days custody of each class.

NAME OF GAOL.	Total No. of Prisoners committed.	No. whose maintenance was defray'd by the Province.	No. whose maintenance was paid by Municipalities.	Total No. of days custody of Government Prisoners for the year.	Total No. of days custody of Municipal Prisoners for the year.
Brantford	351	107	244	2,585	4,694
Barrie	122	40	82	1,351	2,719
Berlin	52	35	17	803	309
Brampton	46	13	33	1,068	713
Brockville	152	65	87	2,220	2,093
Belleville	103	42	61	1,138	2,243
Cayuga	40	13	27	364	538
Cornwall	29	20	9	432	350
Cobourg	182	50	132	1,572	4,345
Chatham	99	36	63	1,878	1,554
Goderich	67	20	47	851	1,109
Guelph	133	32	101	2,154	1,514
Hamilton	981	127	854	4,279	19,054
Kingston	339	77	262	2,531	8,037
London	350	193	157	6,602	5,370
Lindsay	59	16	43	572	1,167
L'Orignal	11	4	7	86	87
Milton	50	31	19	733	354
Napanee	67	34	33	786	1,674
Ottawa	400	32	368	2,402	5,353
Owen Sound	92	21	71	1,066	3,284
Perth	41	11	30	440	1,667

NAME OF GAOL.	Total No. of Prisoners committed.	No. whose maintenance was defray'd by the Province.	No. whose maintenance was paid by Municipalities.	Total No. of days custody of Government Prisoners for the year.	Total No. of days custody of Municipal Prisoners for the year.
Picton	35	10	25	28	160
Pembroke	53	9	44	389	1,320
Peterboro'	82	32	50	1,569	2,158
Simcoe	85	39	46	1,073	439
St. Catharines	129	56	73	2,880	4,473
Sarnia	167	42	125	1,764	1,338
Stratford	57	21	36	2,147	1,975
Sandwich	196	45	151	2,954	5,084
St. Thomas	45	37	8	1,034	296
Sault Ste. Marie	12	12	.....	183	.....
Toronto	1,984	154	1,830	9,406	37,261
Walkerton	26	10	16	1,276	1,170
Woodstock	78	33	45	1,448	2,017
Welland	103	30	73	1,295	1,429
Whitby	140	37	103	1,586	957
	6,958	1,586	5,372	64,945	128,305

An examination of this table shews that the entire collective stay of all the prisoners committed to the thirty-seven Gaols during the past year was 193,250 days, or an average of 27¾ days gaol custody for each prisoner.

The number of criminal prisoners supported by the Government, was 1586, who collectively remained in Gaol 64,945 days, or an average Gaol confinement of forty-one days per prisoner. The prisoners maintained by municipalities numbered 5,372 with a collective Gaol residence of 128,305 days, or a little under twenty-four days for each prisoner.

The following table shews the number of employees in each Gaol and the salaries paid to each, as well as the entire cost of the same. It also gives the entire cost of maintaining each Gaol, exclusive of salaries and wages, and the rate per prisoner that each of the services named costs, and the cost per prisoner for the entire maintenance of each Gaol.

GAOL EXPENDITURES.

NAME OF GAOL.	No. of Officers and Employees in Gaols.	No. of Prisoners passed through the Gaol during the year.	SALARIES. Gaoler.	Turnkeys.	Matron.	Gaol Surgeon.	Total am't of Gaol Officials Salaries.	Cost per Prisoner for Salaries.	Other Gaol expenditures, Salaries excepted.	Cost per Prisoner for Gaol expenditures other than salaries.	Entire Gaol Expenditure.	Cost per Prisoner on entire Gaol expenditure.
Brantford	4	351	$700 00	$500 00	$100 00	$150 00	$1,450 00	$4 13	$2,119 64	$6 03	$3,569 64	$10 16
Barrie	4	122	840 00	200 00	60 00	235 00	1,335 00	10 90	2,547 19	20 87	3,882 19	31 82
Berlin	4	52	500 00	400 00	100 00	200 00	1,200 00	23 07	579 50	11 14	1,779 50	34 22
Brampton	4	46	600 00	500 00	100 00	50 00	1,250 00	27 17	748 93	16 28	1,998 93	43 45
Brockville	4	152	800 00	200 00	100 00	100 00	1,200 00	7 89	1,040 43	6 84	2,240 43	14 73
Belleville	4	103	400 00	400 00	200 00	100 00	1,100 00	10 67	1,176 50	11 42	2,276 50	22 10
Cayuga	4	40	500 00	300 00	80 00	140 00	1,020 00	25 50	1,401 75	35 04	2,421 75	60 54
Cornwall	4	29	740 00	200 00	60 00	50 00	1,050 00	36 20	180 35	6 22	1,230 35	42 42
Cobourg	4	182	800 00	500 00	200 00	80 00	1,580 00	8 68	1,620 13	8 90	3,200 13	12 08
Chatham	4	99	630 00	200 00	100 00	150 00	1,080 00	10 90	1,483 05	14 98	2,563 05	25 88
Goderich	4	67	550 00	400 00	100 00	120 00	1,170 00	17 46	573 60	8 56	1,743 60	26 02
Guelph	4	133	500 00	350 00	200 00	200 00	1,250 00	9 39	511 66	3 84	1,761 66	13 24
Hamilton	6	981	750 00	1,225 00	300 00	200 00	2,475 00	2 52	7,779 54	7 93	10,254 54	10 45
Kingston	4	339	700 00	200 00	150 00	100 00	1,150 00	3 39	2,729 69	8 05	3,879 69	11 44
London	7	350	800 00	1,685 00	410 00	200 00	3,096 00	8 84	3,311 36	9 46	6,407 36	18 30
Lindsay	4	59	400 00	300 00	100 00	80 00	880 00	14 91	508 25	8 61	1,388 25	23 52
L'Orignal	3	11	360 00	.....	40 00	40 00	140 00	40 00	171 50	15 59	611 50	55 59
Milton	4	50	400 00	300 00	40 00	80 00	820 00	16 40	419 42	8 38	1,239 42	24 78
Napanee	4	67	400 00	250 00	100 00	75 00	825 00	12 31	727 75	10 86	1,552 75	23 17
Ottawa	5	400	1,000 00	1,000 00	250 00	100 00	2,350 00	5 87	3,064 21	7 66	5,414 21	13 53
Owen Sound	4	92	700 00	500 00	250 00	400 00	1,850 00	20 10	1,176 65	12 78	3,026 65	32 89
Perth	4	41	600 00	365 00	160 00	80 00	1,205 00	29 39	539 00	13 14	1,744 00	42 53
Picton	3	35	400 00	5 00	.....	30 00	435 00	12 42	165 65	4 73	600 65	17 16
Pembroke	4	53	500 00	300 00	100 00	80 00	980 00	18 49	730 00	13 79	1,710 00	21 22
Peterboro'	4	82	500 00	300 00	100 00	120 00	1,020 00	12 43	1,431 96	17 46	*2,451 96	29 90
Simcoe	4	85	500 00	300 00	200 00	75 00	1,075 00	12 65	834 68	9 81	1,909 68	22 46
St. Catharines	5	129	600 00	660 00	100 00	200 00	1,560 00	12 09	1,287 91	9 98	2,847 91	22 07
Sarnia	4	167	600 00	400 00	136 00	80 00	1,216 00	7 28	1,171 70	7 01	2,387 70	14 29
Stratford	5	57	450 00	242 00	216 00	100 00	1,008 00	17 68	1,009 36	17 70	2,017 36	35 39
Sandwich	4	196	550 00	350 00	182 00	200 00	1,282 00	6 54	1,005 37	5 12	2,287 37	11 67
St. Thomas	4	45	700 00	300 00	100 00	75 00	1,175 00	25 11	877 20	19 49	2,052 20	45 60
Sault Ste. Marie	2	12	400 00	121 00	.....	.....	521 00	43 41	450 04	37 50	971 04	80 92
Toronto	13	1,984	1,400 00	*5,120 00	560 00	600 00	7,680 00	3 88	7,258 81	3 65	14,938 81	7 52
Walkerton	4	26	600 00	350 00	150 00	80 00	1,180 00	45 38	703 52	27 05	1,883 52	72 44
Woodstock	4	78	800 00	400 00	200 00	200 00	1,600 00	20 51	1,591 00	20 39	3,191 00	40 91
Welland	4	103	500 00	312 00	204 00	80 00	1,096 00	10 60	465 00	4 51	1,561 00	15 15
Whitby	4	140	850 00	200 00	100 00	150 00	1,300 00	9 28	935 48	6 68	2,235 48	15 96
	161	6,958	23,020 00	19,336 00	5,546 00	5,099 00	52,904 00	Av., 7 60	54,327 78	Aver., 7 80	107,231 78	Avr., 15 40

* This amount includes the salaries of the Engineer, Steward and Van-driver.

From an examination of this table it would appear that the expenditure for officials' salaries and wages is nearly equal to all the other expenditures of the Gaols; the average of the former being equal to $7·60 per prisoner, and the latter to $7·80.

Escapes.

During the past year sixteen prisoners escaped from Gaols, some of whom have since been recaptured, but the largest proportion are still at large. Into the circumstances connected with all these escapes I held investigations, under the terms of a Commission issued to me by His Excellency the Lieutenant-Governor. The evidence elicited at these examinations showed that ten of the escapes were attributable to neglect of duty and gross carelessness on the part of the Gaol officials, in consequence of which two keepers of Gaols and seven turnkeys were, by the instructions of the Honourable the Attorney-General, dismissed from the service; in addition to whom several turnkeys were discharged by sheriffs without the instructions of Government. In addition to the escapes arising out of neglect of duty and carelessness on the part of officials, three escapes were traced to the practice of taking prisoners beyond the Gaol precincts. For this violation of the law, one gaoler, after repeated warnings, was dismissed by order of the Attorney-General. I am of opinion that the prompt action of the Government in this respect will have a good effect, and that greater care and more active supervision will be taken, both in respect to prisoners and prison matters for the future. Only three escapes, as far as I could discover, were attributable to faulty and defective Gaol construction.

Gaol Construction and Repairs.

Since I entered upon the discharge of the duties of this office, nearly five years ago, the following Gaols have been condemned, either as having been insecure, dilapidated, imperfectly lighted ventilated and drained, or in consequence of their not possessing sufficient space for a proper classification and separation of the prisoners, viz.:—

Sandwich	Gaol,	County of Essex.
Hamilton	"	" Wentworth.
Cornwall	"	United Counties of Stormont, Dundas and Glengarry.
St. Thomas	"	County of Elgin.
Welland	"	" Welland.
Stratford	"	" Perth.
Brockville	"	United Counties of Leeds and Grenville.
Guelph	"	County of Wellington.
Lindsay	"	" Victoria.
London	"	" Middlesex.
Milton	"	" Halton.

Two of the Gaols named in the foregoing list have been, or are now being replaced with new structures: two have been reconstructed, so as to render them in all respects as good as new; another is now undergoing the last named process; and four have been altered and added to, to comply with the provisions of the Statute. The Counties of Middlesex and Halton alone refuse to proceed with the necessary alterations and additions to their buildings, in consequence of which the London Gaol still remains the old dilapidated bug-ridden prison of the last century, at once a blot upon the prisons of the Province and a disgrace to the wealthy County of Middlesex. And the enlightened County Council of Halton still looks upon the complete separation of the sexes in a Gaol as being a superfluous and uncalled for modern innovation.

During the past year a good deal has been done to improve the character of Gaol structures in the Province.

Last year I reported that the County Council of *Wentworth* had purchased a lot, decided upon plans, and asked for tenders for the erection of a new Gaol in Hamilton. Since then the contract has been awarded, and considerable progress has been made with the erection of the building. The plans provide for a substantial and commodious stone structure, comprising a front building of three stories for the prison offices and

officers' quarters, with the Gaol kitchen and stores in the basement. Extending from the rear of this front building is the Gaol proper ; also three stories, in which there are six separate and distinct corridors for a proper separation of the prisoners, with sixty-five cells in all. The specifications provide for the introduction of the most approved heating and ventilating appliances and arrangements throughout the entire building. Provision is also made for hospitals for each sex, and three airing and working yards, surrounded by substantial stone walls of the regulation height. If the specifications are strictly adhered to, this Gaol, when completed, will be the model prison of the Province.

The work of re-constructing the north wing of the *Welland Gaol*, referred to in my last report, has after many delays, been at last completed, and the Sheriff was, at my last inspection, directed to remove all the prisoners into it.

The internal re-construction of the *Lindsay Gaol*, which was commenced last year, has also been completed, through which the prison is now rendered quite secure.

The County Council of *Elgin* has at last commenced the improvements agreed upon between the special committee appointed for that purpose and myself, viz., the entire re-construction of the interior cell work, the enlargement of the windows, and the erection of a wall to surround the yards. The last named work is now completed, and negotiations are now going on with the County of Middlesex authorities for the occupation of cells in the London Gaol, so as to enable the cell work to be proceeded with at once.

In addition to the improvements above detailed, many others, if not so expensive at least quite as important, have been completed in various Gaols of the Province.

The following tables comprise the usual annual statistical returns, and the trades and occupations of the prisoners, as well as the offences for which they were committed to Gaol :—

GAOL STATISTICS of the Province of Ontario, from the 1st of October, 1871, to the 30th of September, 1872.

NAME OF GAOL.	PRISONERS.									NATIONALITIES.						RELIGIOUS DENOMINATIONS.				
	Over 16 years of age.		*Under 16 yrs. of age.*		Total number of prisoners.	Number committed first time.	Number committed second time.	Number committed third time.	Number committed oftener.	Canada.	England.	Ireland.	Scotland.	United States.	Other countries	Roman Catholic.	Church of England.	Presbyterian.	Methodists.	Other Denominations.
	Females	Males.	Females	Males.																
Brantford	94	238	6	13	351	167	55	29	100	197	48	59	28	9	10	103	149	27	48	24
Barrie	3	113	.....	6	122	107	5	9	1	39	34	38	2	3	6	32	60	16	12	2
Berlin	2	43	.....	7	52	25	10	7	10	28	3	1	6	.....	14	4	3	22	5	18
Brampton	2	44	.....	.....	46	32	13	1	.....	15	6	22	3	.....	.....	13	14	9	9	1
Brockville	16	120	6	10	152	66	33	19	34	76	12	47	3	14	.....	63	52	12	18	7
Belleville	27	69	.....	7	103	65	18	12	8	49	17	30	3	4	.....	42	33	5	23	.....
Cayuga	3	36	.....	1	40	33	5	1	1	10	6	12	4	4	4	9	12	5	14	.....
Cornwall	6	21	.....	2	29	21	8	.....	.....	21	1	3	3	1	.....	16	4	8	1	.....
Cobourg	60	121	.....	1	182	98	32	13	39	59	31	77	9	3	3	49	83	24	22	4
Chatham	9	84	.....	6	99	89	8	2	.....	57	9	11	4	31	7	31	12	6	37	13
Goderich	4	63	.....	.....	67	56	6	3	2	22	13	16	11	1	4	8	21	19	18	1
Guelph	17	111	3	2	133	110	14	9	.....	36	24	39	30	5	2	42	40	32	19	.....
Hamilton	300	648	10	23	981	354	142	81	404	271	111	382	77	71	36	118	281	113	112	57
Kingston	134	192	.....	13	339	211	71	24	33	163	69	132	32	3	.....	147	87	34	69	2
London	80	245	2	23	350	222	62	36	30	129	26	80	28	24	3	93	153	45	42	17
Lindsay	7	52	.....	.....	59	57	1	.....	1	45	5	8	3	.....	.....	22	18	9	8	2
L'Orignal	.....	11	.....	.....	11	10	1	.....	.....	10	.....	1	.....	.....	.....	10	.....	.....	.....	1
Milton	4	39	.....	7	50	40	8	2	.....	22	13	10	4	1	.....	4	36	9	5	2
Napanee	10	54	1	2	67	39	8	9	20	41	15	9	.....	4	.....	9	22	1	35	.....
Ottawa	86	283	7	21	400	319	46	19	16	200	46	128	15	10	1	256	99	30	12	3
Owen Sound	13	78	.....	1	92	60	19	8	5	42	13	16	12	.....	3	13	33	24	16	6
Perth	5	33	.....	3	41	24	6	3	8	23	5	7	2	4	.....	10	15	9	2	5
Picton	3	30	.....	2	35	31	1	3	.....	12	2	11	1	4	5	11	6	6	5	7
Pembroke	2	51	.....	.....	53	47	6	.....	.....	39	2	4	.....	4	4	38	4	6	2	3
Peterborough	21	57	.....	4	82	44	19	2	17	29	14	34	3	1	1	44	27	9	2	.....
Simcoe	10	68	2	5	85	68	14	3	.....	51	17	9	3	1	4	5	21	2	15	42
St. Catharines	25	91	2	11	129	123	5	.....	1	62	9	28	12	11	7	44	39	25	25	5
Sarnia	9	152	.....	6	167	119	31	8	9	79	27	44	11	6	.....	72	63	18	10	4
Stratford	7	44	.....	6	57	56	1	.....	.....	22	4	16	8	3	4	14	8	17	9	9
Sandwich	43	141	3	9	196	173	17	5	1	48	23	25	14	80	6	60	38	8	56	34
St. Thomas	4	37	.....	4	45	40	5	.....	.....	14	16	8	4	3	.....	3	14	5	6	17
Sault Ste. Marie	.....	12	.....	.....	12	11	1	.....	.....	6	3	.....	.....	1	2	6	4	2	.....	.....
Toronto	555	1351	13	65	1984	1444	281	129	130	581	406	751	136	71	39	751	870	184	149	30
Walkerton	3	17	.....	6	26	23	3	.....	.....	15	1	4	4	.....	2	4	5	12	3	2
Woodstock	11	64	.....	3	78	45	11	7	15	42	14	12	6	4	.....	14	33	9	16	6
Welland	7	93	.....	3	103	80	13	4	6	47	16	21	4	14	1	25	32	12	26	8
Whitby	33	100	1	6	140	104	9	.....	27	41	35	43	19	1	1	57	37	15	19	12
	1615	5096	56	281	6958	4604	988	448	918	2563	1188	2138	504	396	169	2542	2413	789	870	344

GAOL STATISTICS of the Province of Ontario, from the 1st October, 1871, to the 30th of September, 1872 —*Continued.*

NAME OF GAOL.	Prisoners Married.		Prisoners Unmarried.		Habits of Prisoners.															
	Males.	Females.	Males.	Females.	No. of Prisoners who could neither read nor write.	Temperate.	Intemperate	Greatest number of Prisoners in Gaol at one time.	No. of Escapes.	No. of insane persons or idiots received during the year.	No. of insane persons or idiots now in Gaol.	No. of Deaths.	No. of Cells in Prison.	Actual cash Revenue derived from labour of Prisoners.	Total Gaol expenditure for food, fuel, clothing, officials' salaries, and general expenditure for Gaol purposes, including ordinary repairs.	Cost of daily rations per head.	Total Gaol expenditure for years 1870-71.	Cost of Rations per head, 1870-71.	No. of Prisoners, 1870-71.
Brantford	93	24	161	73	.....	56	295	36	1	9	.....	.....	32	.....	$3569 64	14 7/2 c.	$3351 38	14 97/100 c	305
Barrie	55	2	54	11	46	23	99	29	.....	5	2	2	27	.....	3882 19	13	2561 45	13	168
Berlin	27	1	23	1	5	33	19	11	.....	1	.....	.....	27	.....	1779 26	11	1769 26	11	50
Brampton	11	1	33	1	9	20	26	9	1	3	1	.....	25	$105 00	1998 93	16	2099 49	13 13/100	43
Brockville	48	5	82	17	42	23	129	20	1	8	4	1	30	.....	2240 43	11	2286 75	11½	154
Belleville	19	8	56	20	10	34	69	15	.....	9	1	1	18	.....	2276 50	10	2686 00	08	145
Cayuga	12	1	25	2	15	9	31	6	1	3	1	.....	12	.....	2421 75	25	1941 74	25	64
Cornwall	13	2	10	4	5	17	12	5	.....	5	.....	.....	17	.....	1230 35	19	1244 91	19	26
Cobourg	54	17	68	43	50	22	160	33	.....	16	3	2	24	.....	3200 13	12½	3000 25	12½	134
Chatham	37	6	53	3	33	52	47	17	2	3	.....	.....	26	.....	2563 05	14	2497 62	14	99
Goderich	28	3	35	1	.....	20	47	10	.....	5	3	.....	20	.....	1743 60	09	1770 75	10	73
Guelph	31	9	82	11	36	53	80	18	.....	4	1	.....	36	.....	1761 66	13	2590 00	14	154
Hamilton	286	145	385	165	278	247	734	91	1	7	1	.....	30	.....	10254 54	11	9501 84	11	758
Kingston	31	24	169	115	222	46	293	45	.....	15	.....	3	53	.....	3879 69½	09	3819 00	9¾	285
London	116	46	152	36	15	202	148	51	.....	14	2	2	43	.....	6407 36	.....	6125 21	11 7/10	412
Lindsay	10	5	42	2	6	32	27	11	.....	9	.....	.....	18	.....	1388 25	08	1265 21	08	49
L'Orignal	8	.....	3	.....	1	8	3	3	.....	.....	.....	.....	18	.....	611 50	25	739 42	25	11
Milton	29	3	26	1	18	11	39	8	.....	2	.....	.....	12	.....	1239 42	12½	1219 81	10	37
Napanee	35	2	20	10	25	38	29	11	1	2	.....	2	18	.....	1552 75	11	993 96	12	53
Ottawa	121	31	184	64	201	146	254	33	.....	5	.....	1	96	578 00	5414 21	09	4305 92	8½	451
Owen Sound	32	8	47	5	23	35	57	22	.....	12	6	3	18	.....	3026 65	14	2645 11	15	78
Perth	15	2	22	2	12	18	23	11	.....	7	1	1	18	.....	1744 00	15	1977 02	15	62
Picton	16	1	16	2	9	9	26	3	.....	1	.....	.....	22	.....	600 65	10½	703 01	9 7/100	25
Pembroke	16	.....	35	2	18	44	9	10	.....	1	2	.....	24	.....	1710 00	25	1980 00	25	53
Peterborough	17	9	44	12	35	30	52	20	.....	5	2	1	18	.....	2451 96¾	13¼	2293 08	13⅜	100
Simcoe	38	5	34	8	14	38	47	.....	3	11	2	.....	22	.....	1909 68	10¼	2199 31	10¼	93
St. Catharines	47	17	55	10	33	21	108	30	.....	5	2	1	40	.....	2847 91	10½	2848 49	9½	126
Sarnia	59	6	99	3	23	50	117	16	1	9	.....	.....	16	.....	2387 70	20	2155 39	20	130
Stratford	21	2	29	5	6	38	19	18	.....	6	2	4	24	.....	2017 36	9½	2000 10	8¼	83
Sandwich	62	31	86	17	49	97	99	31	.....	4	.....	3	32	.....	2287 37	9	2521 71	12	219
St. Thomas	17	3	23	2	.....	19	26	8	.....	2	.....	.....	14	.....	2052 20	25	1846 00	25	53
Sault Ste. Marie	5	.....	7	.....	4	2	10	3	.....	1	.....	.....	14	25 00	971 04	30	1058 12	30	12
Toronto	322	127	1094	441	407	1076	908	172	3	25	3	4	172	969 94	14938 81	8½	14541 97	8½	1787
Walkerton	9	3	14	.....	9	18	8	12	.....	5	2	.....	24	20 10	1883 52½	9⅜	1563 59	7¼	22
Woodstock	25	3	42	8	15	38	40	17	.....	6	1	1	32	.....	3191 00	14⅜	3070 00	16½	70
Welland	35	6	61	1	20	23	80	16	1	4	1	.....	30	.....	1561 00	10½	1855 00	17	86
Whitby	40	16	66	18	18	49	91	15	.....	9	3	.....	26	75 00	2235 48	9¾	1875 74	9	145
	1831	574	3437	1116	1712	2697	4261	866	16	238	46	32	1128	$1773 04	$107,231 79¾	.....	102,903 61	.....	6615

Occupation and Calling of Prisoners Sentenced to the several Gaols of the Province of Ontario, year ending 30th Sept., 1872.

NAME OF GAOL.	Agents.	Broom and Basket-makers.	Bar-tenders.	Brickmakers and Bricklayers.	Blacksmiths.	Boot and Shoe-makers.	Butchers.	Barbers.	Bakers.	Brushmakers.	Auctioneers.	Constables.	Cabinetmakers and Upholsterers.	Carpenters and Joiners.	Carriage makers.	Housekeepers.	Dentists.	Coopers.	Clerks, Bookkeepers and Students.	Doctors, Druggists and Dentists.	Dressmakers.	Engravers.	Farmers and Yeomen.	Gentlemen.	Grocers.	Gardeners.	Harness makers.	Hatters.	Lawyers.	Labourers.
Brantford				1	1	1		1				1		6						2			25			1				171
Barrie					5	8		1	1					3				1					17						1	59
Berlin			1		5																		6							35
Brampton						1								1				1					12							19
Brockville				1	3	3	1							1				1					3						4	74
Belleville				1		1							1	6									6							36
Cayuga				1			1	1					2	1									5							19
Cornwall																		1												18
Cobourg	1	2			2	6	3		1					1				1	1	1										72
Chatham		2		1		6			1				2	5				3	2	1			11							46
Goderich	1					2							1	4									13	1						14
Guelph					6	3	2	3							3			6	3				7			3		3		63
Hamilton		1	2	2	19	22	15	6	4	5			7	21	1			2	4		7		7	1		3	5			328
Kingston					4	11			2					5					5				7							
London				1	1	28	8	1	2				5	7				5	13		1		2				6		2	143
Lindsay			1			2	1							3							1		7							33
L'Orignal																							3							6
Milton	1					3																	1						1	34
Napanee																							7	2						33
Ottawa	1			1		12	5	2	2					14		21	2		7	1			7		9	3	1		2	199
Owen Sound					2	4	1		1		2		1	3				1	2				31							31
Perth					3		1																4							22
Picton						1			1				1						1				7				1			16
Pembroke						1								2									6							38
Peterboro'						1	1							2				1					3							40
Simcoe						2		1						3		5		2	2	2			12						1	49
St. Catharines					1	2	1	1	2							6			1				10							46
Sarnia	1				1	4	4		1					8		4			1	1			4							115
Stratford					1			1												2			3							25
Sandwich			1	2	2	8		3						5		8			4		1		10							70
St. Thomas						1																	4				1			31
Sault Ste Marie								1															2							7
Toronto	7	3		26	21	35	28	10	12	1	1	2	16	85	3			4	46	2		1	22		3	4	8	5	7	780
Walkerton				2									1						1				7							6
Woodstock														3	1	4			4	2	1		10							86
Welland			1		1	2	1		2					3	2								3							58
Whitby					4	3								1				1					4							89
	12	8	6	39	82	173	73	32	32	6	3	3	37	193	10	48	2	30	97	14	11	1	288	4	12	14	22	8	18	2861

Occupation and Calling of Prisoners, &c., for the Year ending the 30th September, 1872.—*Continued.*

NAME OF GAOL.	Merchants, Traders and Dealers.	Millers and Distillers.	Moulders.	Machinists.	Masons and Stone Cutters.	Millwrights.	Painters.	Painters.	Photographers.	Plasterers.	Pedlers.	Plumbers.	Prostitutes.	Railway Employees.	Servants.	Sailors and Fishermen.	School Teachers.	Soldiers.	Stage Drivers and Grooms.	Teamsters.	Tinsmiths.	Tanners.	Tailors.	Telegraph Operators.	Woodturners.	Weavers and Woolsorters.	Wheelwrights.	Watchmakers and Jewellers.	Waggonmakers.	Vagrants.	Washerwomen.	Civil Engineers.	Ship Carpenters.	Boys.	No Occupation.	Total.
Brantford	3		6	5		1		1					30	1		2			1				6					1					1	81	351
Barrie	3	1			6		1	3		2																	1							7	122
Berlin			1				1							1																				2	52
Brampton							1				1			3									4											46	46
Brockville			5	1	4			3		2			1	2	7	4	3										1					1	4	152
Belleville	1	1			2			2							18	9	2		1									3	1			6	7	103
Cayuga		1						1							3	3										1						1		9	40
Cornwall	1				1			1							6																				29
Cobourg	3	2			2								44		1	1			7		1	1	1					1						28	182
Chatham	1						1	3			1				2	2					1		2											99	99
Goderich	1			2		1										10	1		1				6						6					67	67
Guelph	4		1		3			2							1								1									2	7	133
Hamilton	13		16	18	8		2	22		7	17	1			252	25	3		7	1	4		17		4	2		6	3			1		20	981
Kingston	1				2			4								15	2	2		3			3										86	339
London	5		1	6				6		1	1				77	4					3	2	13			3			3			2	270	350
Lindsay	2														3																			4	59
L'Orignal								2																											11
Milton	1				1											1					1					1							5	50
Napanee	8									2	3				12																			67
Ottawa	3			1	9	3	1	5			1		35		12		1				1		4							24		10	1	400	400
Owen Sound	1				1											8					1					2								92	92
Perth	1																																	3	41
Picton															2	1																		3	35
Pembroke																																		6	53
Peterboro'					1			4																										13	82
Simcoe	1	1			1		1								1																			85	85
St. Catharines				3				3							22	16	1		1				1					1				3		7	129
Sarnia				2	3										3		1			3			2											6	167
Stratford	4	1	1		1			3			2		2		3	1							5											2	57
Sandwich	2		5		1			5			1		18		20	13			4	2				1										6	196
St. Thomas	1						1								4																			2	45
Sault Ste. Marie	1															1																			12	12
Toronto	11	2	28	27	9		32	18		18	10	5		2	8	51			7	12	4	1	16	1		3	1	1	3			7	6		569	1984
Walkerton	2															1																		6	26
Woodstock	2	1						1	1						1				1		1		1		1									7	78
Welland	4		1		2			1								8			2				1									1		10	103
Whitby			1		1																		2											34	140
	79	10	67	65	58	5	41	90	1	32	37	6	130	9	458	176	14	2	32	23	21	4	90	4	5	12	2	14	10	39	26	13	13	22	1209	6958

OFFENCES FOR WHICH PRISONERS WERE COMMITTED.

NAME OF GAOL.	Assault.	Do. Felonious.	Arson.	Abusive and obscene language.	Escaping from and obstructing constable.	Burglary.	Bigamy.	Breach of By-laws.	Beastiality.	Conspiracy.	Concealment of Birth	Cruelty to Animals	Contempt of Court.	Counterfeiting and passing counterfeit money.	Carrying unlawful weapons.	Cutting and wounding and attempting the same.	Destroying and injuring property.	Debtors.	Drunk and Disorderly.	Detained as Witnesses.	Deserting Employment.	Desertion from Army.	Disobeying Military Orders.	Embezzlement.	Forgery.	Fraud and obtaining goods and money under false pretences.	Felony.	Horse, Cattle and Sheep stealing.	Housebreaking.	Indecent assault and exposures.
Brantford	31	3	....	8										1	....	2	8	....	126	....	5	....	....	....	....	4	....	....	6	3
Barrie	11	....	....	....									4	....	....	....	....	1	60	....	5	....	1	....	1	....	....	1	....	....
Berlin	7	....	....	....									....	....	....	....	....	....	1	....	2	....	....	....	....	....	5	....	3	....
Brampton	6	....	....	1									....	....	....	....	2	....	12	....	1	....	....	....	....	....	....	2	1	4
Brockville	1	12	....	4									....	....	....	....	....	....	45	....	....	....	....	....	2	....	....	....	....	1
Belleville	11	....	....	....		4	1	....	....	....	....	....	1	....	....	....	3	2	11	....	....	....	....	....	....	1	....	....	....	....
Cayuga	6	....	....	....		....	....	....	....	....	....	....	....	....	....	....	1	....	11	....	3	....	....	....	....	....	....	1	....	....
Cornwall	16	....	....	1		....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Cobourg	9	....	4	....		....	....	....	....	....	....	....	....	....	....	....	1	....	57	....	....	....	....	1	1	1	1	....	....
Chatham	7	2	3	....		....	2	....	....	....	....	....	....	....	1	....	2	....	15	....	1	....	....	2	....	2	....	3	2	....
Goderich	9	....	....	....		....	....	....	....	....	....	....	1	....	....	....	....	1	32	....	....	....	....	....	....	....	....	....	....	1
Guelph	18	....	....	....		1	....	1	....	....	....	....	2	....	....	....	1	1	40	2	2	....	....	1	....	2	1	4	....	....
Hamilton	102	13	3	27		....	....	....	....	....	....	2	4	....	2	....	23	....	325	....	5	....	....	4	2	7	3	4	5	2
Kingston	15	....	3	....		1	....	....	....	....	....	....	....	....	....	1	3	....	38	....	....	....	2	....	1	2	....	2	....	....
London	65	....	1	....	1	2	....	....	....	....	1	3	....	5	....	....	9	....	84	1	2	....	....	10	....	5	....	6	....	....
Lindsay	1	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	1	8	....	13	....	....	....	1	....	....	....	....	1
L'Orignal	....	....	....	....		....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Milton	7	....	....	2		3	....	....	1	....	....	....	....	....	....	....	....	....	10	1	....	....	....	....	....	1	1	1	1	....
Napanee	7	....	1	2		2	....	....	....	....	1	2	....	....	....	1	....	1	3	....	....	....	....	....	....	....	....	....	....	....
Ottawa	36	....	2	....		....	....	....	....	....	....	....	2	....	....	....	4	8	161	2	15	1	....	....	....	6	7	....	....	....
Owen Sound	15	....	....	....		....	1	....	....	....	....	....	....	....	....	....	....	1	20	....	....	....	....	....	....	....	....	....	....	....
Perth	5	....	....	1		....	....	1	....	....	....	....	....	....	....	....	....	....	8	2	....	....	....	....	....	....	....	....	....	....
Picton	3	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	23	....	....	....	....	....	....	....	....	....	....	....
Pembroke	1	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	25	....	....	....	....	....	....	....	1	....
Peterboro'	9	....	....	4		....	....	....	1	....	....	....	....	....	....	....	1	....	7	....	2	....	....	....	1	2	....	....	....	....
Simcoe	10	1	....	....		....	....	2	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	1	3	....	....	1	....
St. Catharines	3	14	4	3		....	....	2	....	....	....	1	....	....	....	....	5	1	37	....	....	....	....	....	....	....	....	1	....	....
Sarnia	16	....	2	....	1	....	....	1	....	....	1	....	3	....	....	1	1	1	57	....	1	....	....	....	....	....	....	7	....	1
Stratford	....	....	....	....		....	....	....	....	....	1	....	5	....	....	....	1	....	8	....	....	....	....	....	....	2	....	1	....	....
Sandwich	21	1	2	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	52	1	....	....	....	....	....	1	....	4	1	8
St. Thomas	10	....	1	....		....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	....	....	....	....	....	....	1	....	....
Sault Ste. Marie	2	....	....	....		2	....	....	....	....	....	....	....	....	....	....	....	....	4	....	1	....	....	....	....	....	....	....	....	....
Toronto	98	13	2	3	19	4	....	6	....	13	....	1	3	....	....	6	3	....	1247	1	20	....	....	....	3	13	....	2	....	4
Walkerton	1	....	....	....		....	....	....	....	....	....	....	2	....	....	....	....	3	....	....	....	....	....	5	....	....	....	....	....	....
Woodstock	5	....	1	1		1	....	2	....	....	1	....	2	....	....	....	1	6	12	....	2	....	....	....	1	....	....	....	....	....
Welland	7	2	....	1		....	....	....	....	....	....	1	3	....	....	....	....	....	43	....	8	....	....	....	1	3	....	3	....	....
Whitby	6	....	....	....		....	1	....	....	....	....	1	....	....	....	....	....	1	54	....	....	....	....	....	....	....	....	....	2	....
	577	61	29	58	22	20	5	13	2	13	5	13	35	6	3	11	69	30	2615	10	115	1	3	21	17	56	18	43	23	25

OFFENCES FOR WHICH PRISONERS WERE COMMITTED.—*Continued.*

NAME OF GAOL.	Inmates and frequenters of Houses of Ill-fame.	Keeping Houses of Ill-fame.	Larceny.	Liberating Prisoners.	Lunatics and others dangerous to be at large.	Murder.	Manslaughter.	Misdemeanor.	Perjury.	Rape and assault with intent.	Robbery.	Receiving stolen goods.	Remands.	Seduction.	Shooting with intent.	Unlawful shooting.	Selling liquor without license.	Threatening and seditious language	Trespass.	Non-payment of fines and costs.	Vagrancy.	Want of Sureties to keep the peace.	Child desertion.	Stabbing.	Furious driving.	Prostitution.	Escaping from Penitentiary.	Gambling.	Breach of Peace.	Total.
Brantford	.....	.....	45	.....	9	8	.....	.....	1	7	.....	.....	.....	.....	.....	.....	1	3	.....	.....	78	.....	.....	.....	.....	.....	2	.....	.....	351
Barrie	.....	.....	18	.....	5	1	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	122
Berlin	.....	.....	21	.....	1	.....	7	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	52
Brampton	.....	.....	5	.....	3	.....	3	.....	.....	1	.....	.....	.....	.....	1	1	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
Brockville	.....	.....	34	.....	4	1	.....	.....	.....	4	.....	1	.....	.....	2	1	1	.....	.....	.....	31	5	1	.....	.....	1	.....	.....	1	152
Belleville	.....	.....	11	.....	11	.....	1	.....	.....	2	3	.....	.....	.....	.....	.....	.....	2	.....	.....	36	3	.....	.....	.....	.....	.....	.....	.....	103
Cayuga	.....	.....	6	.....	3	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1	.....	1	1	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	40
Cornwall	.....	2	3	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
Cobourg	2	2	17	.....	16	3	.....	1	1	.....	.....	.....	.....	.....	2	1	1	.....	5	.....	52	5	.....	.....	.....	.....	.....	.....	.....	182
Chatham	.....	.....	27	.....	4	.....	1	4	.....	.....	.....	2	.....	.....	1	.....	2	1	.....	2	6	4	.....	.....	.....	3	.....	.....	.....	99
Goderich	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	4	.....	1	9	.....	.....	1	.....	.....	.....	.....	.....	67
Guelph	4	2	15	.....	4	2	.....	.....	.....	3	.....	.....	.....	1	.....	.....	.....	.....	1	.....	24	.....	.....	.....	.....	.....	.....	1	.....	133
Hamilton	22	9	101	.....	7	3	1	3	.....	7	1	7	.....	.....	2	.....	3	2	3	5	200	66	2	2	1	.....	.....	.....	1	981
Kingston	.....	.....	20	.....	15	1	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	221	5	2	3	.....	.....	1	.....	.....	339
London	.....	6	50	.....	14	.....	.....	.....	4	5	4	4	.....	.....	19	.....	1	.....	.....	.....	50	.....	.....	.....	1	.....	.....	.....	.....	350
Lindsay	.....	.....	12	.....	9	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	2	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	59
L'Orignal	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	2	.....	.....	1	.....	.....	.....	.....	.....	11
Milton	.....	2	13	.....	2	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	50
Napanee	.....	.....	21	.....	3	.....	1	.....	.....	.....	.....	1	5	.....	.....	.....	1	.....	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	67
Ottawa	7	9	40	.....	5	1	.....	2	.....	4	.....	.....	.....	.....	1	.....	2	.....	2	2	62	.....	.....	.....	.....	.....	.....	.....	19	400
Owen Sound	1	2	14	.....	9	.....	.....	.....	3	.....	.....	1	.....	.....	1	.....	1	.....	1	.....	20	1	.....	1	.....	.....	.....	.....	.....	92
Perth	.....	.....	3	.....	3	.....	1	.....	.....	1	3	.....	1	.....	.....	.....	.....	.....	.....	.....	5	6	.....	.....	1	.....	.....	.....	.....	41
Picton	1	.....	4	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	35
Pembroke	.....	.....	6	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	5	6	5	.....	.....	.....	.....	.....	.....	.....	53
Peterboro'	2	4	10	.....	5	.....	.....	.....	.....	.....	.....	.....	13	.....	.....	.....	.....	.....	1	1	16	3	.....	.....	.....	.....	.....	.....	.....	82
Simcoe	.....	1	27	.....	11	.....	2	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	23	.....	.....	.....	.....	.....	.....	.....	.....	85
St. Catharines	2	1	31	.....	5	.....	.....	.....	.....	1	.....	2	.....	.....	1	.....	.....	.....	.....	.....	6	6	1	2	.....	.....	.....	.....	.....	129
Sarnia	.....	.....	16	.....	10	.....	.....	3	.....	1	23	.....	.....	1	.....	.....	.....	5	.....	.....	14	1	.....	.....	.....	.....	.....	.....	.....	167
Stratford	2	.....	19	.....	6	.....	.....	.....	.....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	1	.....	.....	.....	.....	.....	.....	57
Sandwich	6	1	40	.....	1	3	.....	3	1	.....	.....	.....	.....	.....	4	.....	.....	1	.....	1	36	5	.....	1	.....	.....	.....	.....	.....	196
St. Thomas	.....	.....	19	.....	2	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	45
Sault Ste. Marie	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
Toronto	17	10	206	4	24	8	2	7	2	3	4	5	.....	.....	2	.....	9	70	14	.....	125	.....	2	3	1	.....	.....	.....	.....	1984
Walkerton	.....	.....	5	.....	5	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	6	.....	.....	.....	.....	.....	.....	.....	.....	26
Woodstock	.....	.....	24	.....	6	3	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	3	.....	.....	.....	.....	.....	.....	.....	78
Welland	.....	.....	12	.....	4	.....	.....	1	.....	3	.....	.....	.....	1	2	.....	.....	1	1	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	103
Whitby	.....	.....	20	.....	9	2	.....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	4	35	.....	.....	.....	.....	.....	.....	.....	.....	140
	66	51	919	4	219	39	10	39	12	55	51	24	22	3	40	5	22	100	31	24	1123	124	9	14	4	4	3	1	21	6958

SEPARATE INSPECTION REPORTS

ON THE

STATE AND MANAGEMENT

OF

THE COMMON GAOLS.

Brantford Gaol.

County of Brant.

Statutory inspection was made of this Gaol on the 6th of March and 6th of August. On the former occasion there were 26 prisoners in confinement, of whom 19 were men, and 7 women. Of this number no less than 12 had been committed under the Vagrancy Act—three of this class had been sent to Gaol upon their own application, being without a home or means of support. Some of the men were strong and healthy, and quite able to do a day's work. The necessity of committing such persons to the Common Gaol strongly suggests the propriety of founding a Poor-house, or a Poor house and a House of Industry combined. Certainly the Gaol is no place for persons entirely free from crime or even criminal intent.

The Gaol was found in a most creditable state of order and cleanliness, with the prison regulations very generally acted upon.

Many improvements have taken place in connection with this Gaol during the past year. The barns and sheds have at last been removed from the working yard, and the house for the gaoler has been enlarged and improved. In order to render the yards more secure, I recommended that the walls be increased in height.

At my visit to the Gaol on the 6th of August, the number of prisoners had increased to 28, of whom 16 were Indians. No less than 5 of the last-named were waiting trial for murder, the remaining 11 were committed for vagrancy, drunkenness, and disorderly conduct. The practice of having the Gaol washing done outside the prison, and paying for the same, was ordered to be discontinued—that service in future is to be done by the prisoners. However desirable it may be to have female prisoners sentenced to hard labour, kept constantly employed, the propriety of using such prisoners to do the domestic work of the gaoler and turnkey, without the County or Government receiving remuneration for the same, is very questionable.

During the past year 351 prisoners passed through this Gaol, being an advance of nearly 20 per cent on last year's commitments. Of these 351 prisoners, 55 had been committed twice during the year, 29 were committed three times, and 100 were committed from four to six times.

The cost of maintaining the Gaol for the same period was $3,569 64, and the daily cost of prisoners' rations was $14\frac{7}{12}$ cents.

Barrie Gaol.

County of Simcoe.

This Gaol was visited on the 15th July, when there were 14 prisoners in custody, viz., 8 men and 6 women. Two of the former were, upon examination, found to be insane, and were at once removed to an asylum.

Of the five idiotic and imbecile persons referred to in previous reports, two were found to be proper subjects for the Idiot Asylum at London, to which institution they were immediately removed; the remaining three of this class, although weak-minded, could be sufficiently well cared for in a Poor-house, to which place I recommend their removal.

The several corridors and cells of the prison were found in a very clean and orderly state. The work of enlarging the prison kitchen, so frequently recommended had just commenced at my visit. The attention of the County Engineer was drawn to the necessity of having proper drains from the Gaol and yards.

At an examination made last year, into the circumstances connected with the escape of a prisoner from this Gaol, it was proven that that escape was attributable to the practice of taking prisoners beyond the precincts of the gaol, to perform work for the gaoler. To guard against such an occurrence again happening the Gaol officials were notified to discontinue the practice. Notwithstanding this direct order and precautionary instruction, I found, on visiting the Gaol on the 15th of July, that it was still continued, and that, at the time of my visit, two prisoners were at work for the gaoler, at a considerable distance from the Gaol. One of these prisoners had been sentenced to 21 months for an indecent assault, and the other had been committed as a lunatic, but had not then been certified as such by the examining authorities. On these facts being represented to the Government, the Sheriff was instructed to dismiss the gaoler.

The number of prisoners committed to this Gaol during the past year, was considerably less than for the previous twelve months, viz., 122 against 168. The Gaol expenditure for the year amounted to $3882·19, and the daily cost of rations per prisoner was 13 cents. The cost of maintaining this Gaol is so much in excess of other Gaol expenditures, even where a greater number of prisoners had been committed, that the matter requires a searching investigation on the part of the County authorities. The County Council still continues the objectionable system of paying the gaoler a certain sum per annum out of which that official has to pay his turnkey and matron.

Berlin Gaol.

County of Waterloo.

Inspection was made of this Gaol on 27th August, on which occasion every part of it was found in the best possible order, and a model of cleanliness throughout. The yards were also well kept and very tidy in appearance. Only two prisoners were in confinement at the time of my visit; one, a lad under seven years of age, for stealing a watch, the other a man waiting trial for a felonious assault.

Fifty-two prisoners were committed to this Gaol during the past year, over half of whom were recommittals. Gaol expenditures $1759·50—daily cost of prisoners' rations 11 cents.

Brampton Gaol.

County of Peel.

At my inspection of this Gaol on the 18th of March, every corridor, room and cell in the building was found in the best order, and thoroughly clean throughout.

The several yards were examined, and found to be tidy and well kept.

Only two prisoners were in confinement, one of whom has been in Gaol for the past three years, as being incapable of taking care of himself, the other was under sentence for forgery.

The attention of the Council was directed to the scarcity of water for Gaol purposes and it was reminded that cleanliness, throughout the prison, could not be expected without a sufficient supply.

A prisoner escaped from this Gaol on the 19th of August, while engaged in cleaning a well in the grounds outside the prison. The attention of the authorities had frequently been called to the danger attending the practice of taking criminal prisoners beyond the gaol precincts, even if to do work for the County. Through neglect of this precautionary

instruction the prisoner before referred to made his escape, and although re-captured, the Sheriff was warned by the Provincial Secretary that, should another breach by the gaoler of the prison regulations occur, similar to that which led to the escape, he would be advised to order the dismissal of the gaoler.

During the past year 46 prisoners were committed to this Gaol, of which number only two were females.

The Gaol expenditures for the year amounted to $2099·44. The cost of prisoners' rations was 13 cents per day,

Brockville Gaol.

United Counties of Leeds and Grenville.

Two statutory inspections were made of this Gaol during the past year.

At my first visit to it, on the 14th of June, alterations and additions to the building were in progress, in consequence of which neither order nor cleanliness prevailed.

The new wing for day-rooms, which had just been completed, was thoroughly examined, and was found, both in respect to material and workmanship, to be substantial and safe for the custody of prisoners. The enlargement of the prison windows had also been completed. The iron-work of which was, in all respects, solid and secure.

The alterations and additions thus made to this Gaol very much improve its sanitary condition, while the provision of three new day-rooms affords a means of classifying the prisoners which could not be had before. Before finally accepting the prison in its re-constructed state, the Building Committee of the County Council were required to remove the padlocks then in use throughout the prison, and substitute locks of a pattern pointed out. The introduction of dry earth-closets into the day-rooms was also recommended, as well as the placing of screens in the female day-room to prevent communication with the outside.

Of the 10 prisoners in custody at my visit eight were men and two women. Three of the former being helpless bed-ridden paupers, whose care in a Common Gaol was attended with great trouble. A female committed as insane was evidently of a class that would derive little if any mental benefit from asylum treatment, in consequence of which her transfer was not recommended.

Examination was made into the circumstances connected with the escape of a prisoner from the Gaol, on the 23rd December, when it was found that, owing to carelessness on the part of the turnkey in not locking the prisoner up, he succeded in concealing himself in the yard until night, when he effected his escape by the means of planks then being used by the contractor in repairs to the Gaol. Although the turnkey was discharged for neglect of duty, the gaoler was directed to make a personal examination of all parts of the building and yards before locking up the prisoners for the night, and that he would be held responsible for the performance of this duty in future.

At my inspection, on the 4th September there were 12 prisoners in custody—nine men and three women. One of the number was an insane person, who, although he had been committed to the Gaol a month before, had not then undergone the statutory examination. This neglect was brought to the notice of the authorities.

Owing to the want of proper locks on the cell doors two prisoners, joint confederates in the commission of a most serious crime, were found in the same cell, a state of things which might seriously interfere with, if not entirely defeat the ends of justice.

On this occasion the Gaol was found in a very untidy condition, with bedding lying on the floors and benches. The new day-rooms were also being used as dormitories. The Gaol Committee was again requested to complete the work suggested in previous minutes.

One hundred and fifty two prisoners were committed to this Gaol during the year ending 30th September. The entire Gaol expenditures for the same period were $2,289 75, and the daily cost of the prisoners' rations, 11¼ cents.

Belleville Gaol.

County of Hastings.

I visited this Gaol on the 24th of January and 3rd of July. On the first occasion

there were six men and eight women in custody, no less than seven of whom had been committed as vagrants.

A woman committed to the Gaol as a lunatic, was recommended for transfer to Rockwood Asylum.

The several corridors and cells were found in good order, with cleanliness and neatness prevailing throughout the Gaol. A store room for prisoners' clothing was recommended.

At my second visit there were 9 prisoners in custody—5 men and 4 women. Two of the latter, who had been in confinement for over a year, were, both from their appearance and manner, quite idiotic. Although both of them had been certified to be insane, it was very evident that they would not derive mental benefit from Asylum treatment, consequently their transfer to an institution of that kind had not previously been recommended. They were afterwards transferred to the Idiot Asylum at London.

A prisoner had been sentenced, for an indecent assault, to six months' confinement in Gaol and twenty lashes. The latter part of the sentence had not been carried into effect at the date of my visit.

The prisoners committed to this Gaol during the year numbered 103, or a decrease of over forty per cent. upon the committments of the previous year. The cost of maintaining the Gaol amounted to $2,276·50 ; the cost of prisoners' rations was 10 cents per day.

Cayuga Gaol.

County of Haldimand.

This Gaol was examined on the 7th of August, on which day there were only two prisoners in custody, one of whom had been committed as a lunatic, but who, at my visit, had so far recovered that his transfer to an Asylum was not considered necessary.

The number of prisoners committed to this Gaol during the past year was unusually small, and very frequently during the year the Gaol has been without a single occupant.

Owing to alterations that were going on at the time of my visit, the Gaol was not found in its usual state of cleanliness and order. I examined into the circumstances connected with the escape of a prisoner from the Gaol, on the evening of the 21st October, 1871, and found that it was attributable to carelessness and neglect of duty on the part of the turnkey, who was discharged.

Only 40 prisoners were committed to this Gaol during the year, of whom 37 were men and 3 were women.

The cost of maintaining these 40 prisoners during the year amounted to $2,421·75. This amount is greater than what was required to maintain 103 prisoners at Belleville, viz., $2,276·50. Nor is this excess in expenditure explained by the total number of days' custody of the prisoners, for we find that the collective stay of the 40 prisoners at Cayuga was only 902 days, while at Belleville the collective stay of the 103 was 3,381 days, or nearly four times as great. This increased expenditure is partially attributable to the persistent refusal of the County Council to comply with the Gaol dietary regulations. Through this infraction the gaoler receives 25 cents per day for the rations of each prisoner, while at Belleville the same service is performed as satisfactorily for ten cents per day.

Cornwall Gaol.

United Counties of Stormont, Dundas and Glengarry.

Statutory inspection was made of this Gaol on the 14th June, when I found every part of the building in excellent order, and neatly and well kept throughout.

The office of keeper of the Gaol was then vacant, owing to the death of Mr. Macdonald, gaoler, and the prison was in charge of the turnkey.

There were only two prisoners in custody—one a female who had just been committed as a lunatic, but in whose case an examination had not then taken place. She had been, previous to this, an inmate of Toronto Asylum, to which institution she was again recommended for transfer.

The commitments to this Gaol for the year were only 29, and five of that number were committed as insane or idiotic persons.

The expenditures for the year amounted to $1,230·35, and the daily cost of each prisoner's rations was 19 cents.

Cobourg Gaol.

United Counties of Northumberland and Durham.

Two inspections were made of this Gaol, the first on the 4th March, and again on the 20th day of August.

At my first inspection there were 22 prisoners in confinement, viz., 16 men and 6 women. Three of this number had been committed as lunatics, two of whom were recommended for removal to the Toronto Asylum, which immediately took place. The other had every appearance of being a quiet harmless imbecile, who would derive little or no benefit from Asylum treatment, in consequence of which her removal was not recommended. A vagrant, who is almost a constant resident of the Gaol, was again found in custody, having been recommitted at his own request. This man, who was afflicted with rheumatism, and in bed, should have been sent to some other place than a Common Gaol.

At my visit to the prison on the 20th of August, there were 14 prisoners in confinement. Five of this number were insane, three of whom were transferred to Toronto Asylum.

No less than sixteen insane persons were committed to this Gaol during the past year, most of whom were proper subjects for Asylum treatment. As the former residence of many of this class of persons was unknown to the Gaol authorities, it is to be feared that some of them came from the other side of the lake, by the daily steamer which touches at the port of Cobourg.

At both my visits every part of the prison, as well as the yards, were found in an exceedingly neat and well ordered condition. The attention of the County Council was called in my minutes of inspection, to the state of the floors in some of the corridors, as well as to the necessity of trapping the water closet openings at their exit from the building.

The beds and bedding were in good order, although some of the cells gave evidence of defective ventilation. During the past year 182 prisoners passed through the Gaol, as against 134 the previous twelve months.

The Gaol expenditures for the year amounted to $3,200.13, and the cost of prisoners rations for the same period was 12½ cents per day.

Chatham Gaol.

County of Kent.

This Gaol was inspected on the 20th of March, and again on the 23rd of October, on both of which occasions there were 12 prisoners in confinement.

At both visits, the corridors, cells and every part of the building were found in the best possible order, and in the utmost state of cleanliness. I passed through the Gaol at night when the prisoners had been locked in their cells. Nearly every cell that was occupied gave evidence of most defective ventilation, while in some the smell was almost unendurable. This state of things is attributable to the absurd system of ventilation—or rather want of ventilation—that exists, viz., by a flue from each cell into the corridors for the ventilation of the cell *at night*, and by the same passages, back into the cells for the ventilation of the corridors during *the day*. I recommended that the cell-ventilating flues be covered by a shaft leading directly to the chimney, in order that this defect might be remedied.

The attention of the gaoler was called to the necessity of piling the wood in the centre of the yard, in place of in close proximity to the walls, in order to prevent escapes.

Two escapes are said to have taken place from this Gaol during the year, neither of which, as far as I am aware, have been reported through the proper channel.

During the past year 99 prisoners were committed to this Gaol, which is the same number as were committed the previous year.

The expenditure for the year amounted to $2,563 .05,and the daily cost of prisoners rations was 14 cents.

Goderich Gaol.

County of Huron.

At my visit to this Gaol on the 19th of March, there were only 3 prisoners in confine ment, all of whom were men. Two of the number were under sentence for long periods, the other was an habitual vagrant. The various departments of the Gaol were in a most creditable condition of order and cleanliness, with the Gaol regulations in respect to dietaries and discipline well attended to.

The County Council having decided to procure prison clothing, at the request of the County Clerk I forwarded samples of the cloth required, with full instructions respecting the same.

Sixty-seven prisoners passed through this Gaol during the past year.

Gaol expenditures amounted to $1743·60, and the daily cost of prisoners' rations was nine cents.

Guelph Gaol.

County of Wellington.

Inspection was made of this Gaol on two occasions during the year. At my first visit on the 19th March, there were six prisoners in confinement, all of whom were men. Four of the number were under sentence for long periods, and for serious offences. The attention of the Gaol officials was called to the disorder that prevailed in some of the corridors, in consequence of wearing apparel being allowed to remain in them, giving them more the appearance of an ordinary bed room than of a Gaol. With this exception, the several departments of the prison, and the yards were in a very clean and well kept state. Owing to the increased number of prisoners sentenced to hard labour, and the quantity of wood that had to be cut, the Sheriff was recommended to engage an extra turnkey.

There were 8 prisoners in custody at my last visit to the Gaol on the 1st August. Two of the number were under sentence for the crime of rape, who, in addition to confinement, had flogging attached to their sentences. Another man was under sentence to two years' imprisonment for manslaughter; and two men were waiting trial, on a charge of murder.

One hundred and thirty-three prisoners were committed to this Gaol during the year. The cost of maintaining the Gaol for the same period was $1761·66. The daily cost of prisoners' rations was thirteen cents.

Hamilton Gaol.

County of Wentworth.

Statutory inspection was made of this Gaol on the 6th March, and again on the 24th August. On the first occasion there were 62 prisoners found in confinement, of whom 42 were men, and 20 women. The number committed for vagrancy, drunkenness and disorderly conduct was unusually large, comprising nearly three-fourths of the entire Gaol population. The prisoners found in Gaol for these offences were, with only a few exceptions, habitual and confirmed offenders, to whom incarceration in a Common Gaol is no sort of punishment, but rather what they desire.

An examination of the register on the day of my visit shewed that one of this class of prisoners had been committed to the Hamilton Gaol 153 times; another 93 times; five from 50 to 75 times; four over 20 times; twelve over 10 times, and only seven of the thirty-eight prisoners who had been sent to the Gaol for the offences named, had been committed for the first time.

Prisoners committed as vagrants were nearly in every case drunkards, which their appearance, as well as the records of the Gaol register, amply confirmed.

A female who had been committed as being insane was found to be an epileptic imbecile who could not derive mental benefit from Asylum treatment, in consequence of which her removal to an Asylum was not recommended.

Every part of the Gaol was examined and found in a very clean and orderly state. Some of the cells contained two and three prisoners which, with the very imperfect ventilation, caused the air in the cells to be very foul and vitiated. All the male prisoners, sentenced to hard labour, were employed in cutting wood in the working yard.

At my inspection on the 24th August, there were 67 prisoners in custody, viz., 37 men and 30 women. Nearly all of the latter were prostitutes of the lowest and most degraded kind; and women committed for drunkenness. No less than ten of the male prisoners had been committed for want of sureties to keep the peace—nearly all for wife-beating. There is great necessity for an amendment of the law to enable this class of prisoners to be placed at hard work.

Several of the prisoners who were confined to their cells during the day, complained of not receiving a sufficient amount of exercise and air. On enquiry I found that they were in close confinement for attempting to escape. Fourteen of the male prisoners were, on this occasion, engaged in polishing castings for a city foundry. As the employment is a most suitable one, it is to be hoped that it will be permanent.

The work at the new Gaol was inspected, and so far as it had progressed, was found to be very substantial, both in respect to workmanship and material.

There were committed to this Gaol during the year, 981 prisoner, of whom 671 were males and 310 females. These figures indicate an increase of a little over thirty per cent in the number of commitments as compared with the previous twelve months.

The total cost of maintaining the Gaol for the year was $10,254·54, and the daily cost of each prisoner's rations was 11 cents.

Kingston Gaol.

County of Frontenac.

I visited this Gaol on the 11th June, and again on the 17th August. On both occasions every part of the Gaol, as well as the yards were examined and found in the highest state of cleanliness, with the most perfect order and neatness prevailing throughout.

The attention of the Sheriff was called to the infraction of the dietary regulations, through which meat rations were indiscriminately served to all prisoners every day. As the dietaries of a prison form an important feature in its discipline the Sheriff was requested to comply with the rules.

The County Council still neglects to provide prison clothing for the sentenced prisoners. The charges preferred against the late turnkey were examined into, and while the action of the Sheriff in dismissing him was approved, it was suggested that when grave charges are preferred against an official in that position, he should be brought before a magistrate with a view to punishment, as well as dismissal.

The number of prisoners found in custody was unusually large, viz: 26 males and 10 females. Two of the number were young lads, respectively aged seven and eight years. This class of prisoners may be punished, and perhaps too severely, by imprisonment in a Gaol, but it is very questionable if such imprisonment will have either a reforming or deterring influence upon them. Two prisoners were found in custody committed by the military authorities. The number of drunk and disorderly characters in confinement was unusually large, and was perhaps attributable to the large number of vessels in the port of Kingston at the time.

Three of the prisoners were committed as lunatics, although neither of them appeared to be proper subjects for the Asylum; one being a case of senile insanity, another was idiotic, and who was afterwards removed to the London Idiot Asylum, and the third was a quiet, harmless, imbecile vagrant.

An old woman, committed as a vagrant, died in this Gaol on the 6th June. An examination was held by a Coroner into the cause of death, when the following verdict was arrived at: "That the deceased died a natural death, this day, the 6th June, in the

"County Gaol of Frontenac, of old age. But this Jury cannot separate without recording "their strong opinion against the cruelty of sending a woman, ninety years of age, to die "in the Common Gaol, without the commission of crime by her, and apparently from no "other cause than that of poverty; and sent from a municipality (Portsmouth) so well "capable of supporting her."

The commitment of such persons to Gaol is not confined to Kingston, but is constantly taking place in every County, with the exception of Waterloo and Norfolk, where they have Poor-houses for such people.

At my visit to the Gaol on the 20th August, there were 21 prisoners in confinement. Two of the number being idiots they were recommended for transfer to the Idiot Asylum; and another—a man who had just arrived in the Province, and who had been in an English Asylum—was recommended for transfer to Rockwood Asylum. A prisoner was also found in custody charged with murdering his father, but who, having been acquitted of the charge on the ground of insanity, was afterwards transferred to Rockwood Asylum.

During the year 339 prisoners passed through the gaol, which is a considerable increase over the preceding twelve months. The cost of maintaining the gaol for the year was $3,879,69, and the daily cost of each prisoner's rations was nine cents.

London Gaol.

County of Middlesex.

Statutory inspection was made of the London Gaol on the 20th March, and again on the 7th August.

At my first visit I found forty-three prisoners under confinement, viz., 29 men and 14 women. A considerable number of these prisoners were committed for drunkenness and vagrancy; while some were waiting trial and others were under sentence for the most serious offences.

I found nearly all of the water-closets in the Gaol in a filthy state, owing to bad construction, want of water, and frost. The heating arrangements were also out of order, in consequence of which three corridors on the north side of the Gaol were too cold to be occupied.

At my inspection of the Gaol on the 5th August there were 38 prisoners in custody, viz., 26 men and 12 women. No less than five of this number had been certified to be idiotic, and proper subjects for the Idiot Asylum. I conversed with, and examined all these persons, and found none of them to be of the class for whom the Idiot Asylum was established, all of them being quiet helpless imbeciles, without any dangerous proclivities. One female was recommended for transfer to the Asylum.

In reply to a report of a Committee of the County Council, dated 15th June, transmitted to the Hon. the Attorney-General, setting forth that the complaints made by me in reference to defects in the Gaol had been "attended to and remedied *to a certain extent*," and that "if I had consulted with the County Engineer an amicable arrangement would have been arrived at," I have to state that I met a committee of the County Council specially appointed to confer with me upon the matter, on the 10th June, 1871. On that occasion I pointed out to the members of the committee the defects that I had so long complained of; I also reduced my observations in connection therewith to writing and sent a copy of the same to the County Council. That document showed that the whole building was in a dilapidated and ruinous condition: that its internal arrangement prevented a proper supervision over prisoners, in consequence of which the discipline of the Gaol was lax; that owing to bad ventilation, darkness and dampness in the lower wards, the health of the prisoners was endangered: that, in consequence of bad drainage and an insufficient supply of water, the air was foul and the water closets filthy; and that the working yard was neither safe nor sufficiently protected to prevent prisoners having communication with the public.

To remedy this long list of defects the County Council enlarged six windows, replanked the side of one ward, and filled up the openings, by shrinkage, of another, and then reported to the Attorney-General "that the complaints were remedied to a certain extent, and if the Inspector had met the County Engineer an amicable arrangement would have been arrived at."

As the whole question is now submitted to the Government for action, it is unnecessary to enlarge upon the subject.

Three hundred and fifty prisoners were committed to the Gaol during the year, of whom 268 were males and 82 females. The cost of maintaining the Gaol for the same period was $6,407·25, while the Kingston Gaol, with about the same number of prisoners only cost $3,879·69. The annual amount paid for officials' salaries at the London Gaol is $3,096, and at Kingston only $1,150 Notwithstanding this, the Kingston Gaol is better managed in all respects, and is at all times a pattern of cleanliness and order, which cannot be said of the London Gaol. With a properly constructed and properly managed prison, the County of Middlesex and the Province would save over $2,000 a year.

Lindsay Gaol.

County of Victoria.

This Gaol was inspected on the 16th May, on which occasion there were only two prisoners in confinement.

The building was found in good order, and the yards neat and well kept. The alterations and additions made to the Gaol were thoroughly examined, and found, both in respect of the workmanship and the class of material used, to be strong and substantial. As the work thus done rendered the Gaol in all respects perfectly safe, and effectually overcame the defects of construction and arrangement heretofore complained of, the Government was recommended to accept the Gaol under the provisions of the Inspection Act. It was further recommended that the appropriation made by the Legislature, towards the repairs, of $2,700, should be paid to the County Council of Victoria.

During the past year 59 prisoners were committed to this Gaol, nine of whom were insane. The cost of maintaining the Gaol for the twelve months was $1,388 25, and the daily cost of each prisoner's rations was eight cents.

L'Orignal Gaol.

United Counties of Presscott and Russell.

This Gaol was inspected on the 9th September, when there were two prisoners in custody. The walls were recommended to be whitewashed, and a few common pine bed stretchers were ordered to be purchased. The Gaol and yards were found in good order. Only eleven prisoners were committed to this Gaol during the year. The cost of maintaining it for the same period was $611 50, which, with the exception of the County of Prince Edward, is the lowest Gaol expenditure of any County in the Province.

Milton Gaol.

County of Halton.

A special committee of the County Council having been appointed to confer with me respecting the state of the Milton Gaol, I had a meeting with them on the 4th June, on which occasion I passed through the Gaol, and pointed out to the Committee the following defects :

1st. That, owing to the bad internal arrangement of the Gaol, it having only two wards, with a corridor running through the centre of each, and cells on each side, it is quite impossible to effect a proper separation of the prisoners.

2nd. That, inasmuch as it is necessary to pass through one corridor to get to the other, and as there is an open stairway leading from the lower to the upper ward, even a proper separation of the sexes cannot be had, and prisoners can converse with each other from every cell in the Gaol.

3rd. There is no prison kitchen or wash-house attached to the Gaol, which renders it necessary to have the cooking and washing done beyond the gaol proper.

4th. The use of one yard in common, for male and female prisoners

I pointed out to the committee the difficulty, if not the impossibility, of remodelling the present structure, so as to make it a well arranged Gaol, owing to the limited space between the walls, and strongly recommended the erection of a new prison, to give accommodation for eighteen prisoners.

Up to the present time no action has been taken by the Council to carry out the recommendation. I would therefore recommend that the provisions of the Statute be placed in force.

The Gaol at the time of my visit was clean and orderly.

During the year 50 prisoners have been committed to it. The cost of maintaining the Gaol for the same period was $1,239 42 ; the daily cost of each prisoner's rations was 12½ cents.

Napanee Gaol.

United Counties of Lennox and Addington.

This Gaol was inspected on the 6th May and 10th September. There were at my first visit six prisoners in confinement, of whom four were men and two women; one of the latter, was committed as a lunatic, but as she had all the appearance of being a congenital idiot, her transfer to the Idiot Asylum was recommended, and took place as soon as that institution was opened. Two of the male prisoners were committed as vagrants, both of whom were infirm old men confined to bed through sickness. In addition to the last named being improper subjects for a Gaol, they were also illegally confined, having been sentenced for six months, when the Vagrancy Act limits the period of sentence to two months.

An investigation was held into the circumstances connected with the escape of a prisoner from the Gaol on the 2nd May. The evidence clearly proved that there was a great want of vigilance in guarding the prison, and that other persons than the prison officials had access to the keys of the corridors. The evidence taken together with my report thereon, was transmitted to the Hon. the Provincial Secretary.

At my inspection of the Gaol on the 10th September, every part of it was found in cellent order, and thoroughly neat and clean throughout.

Only four prisoners were in custody, all of whom were men.

Application having been made for the removal of an insane woman to the Asylum, I was surprised to find that she was not in custody at the time of my visit, although in the papers transmitted to the Provincial Secretary she was not only said to be a *prisoner in custody*, but that she had been apprehended under circumstances that denote a derangement of mind, and a purpose of committing some crime. On enquiry, I learned that the practice prevailed with the examining authorities, in direct violation of the Statute, of certifying lunatic *prisoners* to be insane, who had never entered the Gaol. These irregular proceedings were brought to the notice of the Government.

67 prisoners passed through this Gaol during the past year. The cost of Gaol maintenance amounted to $1,552 75, and the daily cost of each prisoner's rations was eleven cents.

Ottawa Gaol.

County of Carleton.

Two inspections were made of this prison during the year. At the first, on the 13th June, there were 23 prisoners in confinement, of whom 16 were men and 7 women. With one exception all the females had been committed for drunkenness and vagrancy. Every part of the building was found in the most orderly condition, and perfectly clean throughout.

The alterations and additions to the Gaol and yards which had commenced last year had nearly been completed at my visit; but owing to workmen being still engaged with the yard walls the working yard was not then cleaned or levelled up. The defect in the drainage of the Gaol, referred to in my last report, has been remedied; thereby improving the sanitary condition of the premises.

There were 25 prisoners in custody at my second visit to the Gaol on the 10th September, viz., 16 men and 9 women, all the sentenced male prisoners were engaged in breaking

stone; upwards of sixty toise have been broken during the year. The female prisoners were employed in picking oakum, of which a considerable quantity was on hand ready for market. The attention of the Council was called to the necessity of providing Gaol clothing for the sentenced prisoners.

The number of prisoners committed to this Gaol during the year was 400, which is rather under the commitments of the previous year. The number of insane persons committed was only five against twelve the preceding year. The total cost of Gaol maintenance amounted to $5,414 21. The cost of rations was nine cents per day for each prisoner.

Owen Sound Gaol.

County of Grey.

Statutory inspection was made of this Gaol on the 3rd November, when the various corridors, cells and other parts of the Gaol were examined and found only in a fair state of order and cleanliness. Although there was sufficient bedding, it was not clean or tidily kept, in consequence of the prisoners being allowed to have access to their cells during the day. The Gaoler was instructed to lock the cells up in future, after the beds were made up in the morning; and to see that the prison in all its departments was kept in the most clean and orderly state. With the exception of the female airing court all the yards were well and neatly kept.

There were fourteen prisoners in confinement no less than five of whom were insane, idiotic or imbecile persons. Three of the first named class were recommended for transfer to asylums for the insane; and two idiots would have been recommended for removal to the Idiot Asylum had the beds in that institution not have been all exhausted when the papers, required under the Statute, were received.

Owing to the bad internal arrangement of the Gaol, and the very limited accommodation furnished, it is impossible to effect a proper separation of the prisoners; hence in one of the corridors were tried and untried prisoners and young and old offenders indiscriminately mixed together. The practice of sending sick persons to the Gaol for hospital treatment very much interferes with a proper classification of the prisoners, and if continued the number of cells must be increased in the Gaol.

The commitments to the Gaol for the year numbered 92, no less than twelve being insane persons.

The cost of maintaining the Gaol for the same period was $3,026·65. The daily cost of each prisoner's rations was fourteen cents.

Perth Gaol.

County of Lanark.

At my inspection of this Gaol on the 12th of June, every part of it, including the yards, was found in the most admirable order and scrupulosly clean throughout. Only one criminal prisoner was in custody—the remaining three were poor-house cases.

The number of commitments to this Gaol during the year was unusually small, viz., forty-one.

The cost of maintaining the Gaol was $1,744, and the daily cost of each prisoner's rations was fifteen cents.

Picton Gaol.

County of Prince Edward.

This Gaol was visited on the 19th January and again on the 29th June. At neither of my inspections was a prisoner found in it; and an examination of the register showed that the Gaol was frequently without an inmate for very long periods. During the year thirty prisoners were confined in this Gaol, only four of whom were criminal prisoners, all the rest having been committed for drunkenness and want of sureties to keep the peace.

At my visits the building and yards were found in a clean and orderly condition.

The cost of maintaining this Gaol is the lowest of any in the Province, and only amounted to $600·65 for the year ending 30th September. The cost of prisoners' rations was ten and a half cents per day for each prisoner.

Pembroke Gaol.

County of Renfrew.

At my visit to this Gaol on the 6th September, all the corridors cells and other portions of the prison, as well as the yards, were found in an excellent state of cleanliness and order.

As no separate yard is provided for the Gaoler's domestic uses, I found that the Gaol yards were being used for that purpose, a practice which is not only entirely at variance with proper Gaol administration, but which very much endangers the safe custody of prisoners. The Sheriff was instructed to prohibit the use of the Gaol yards for other than Gaol purposes, and the County Council was recommended to furnish a yard for the gaoler's family.

I found six prisoners in custody, all men, one of whom was waiting trial on a charge of murder, one under sentence for larceny, and one for deserting employment; the remaining three were committed as lunatics, two of whom were harmless imbeciles who had been residents of the Gaol for three and five years respectively; the other, although committed on the 2nd July as a lunatic had not at my visit undergone the statutory examination, in order to determine whether he was insane or not. If insane, his continued custody in Gaol would certainly not improve his mental condition, and he should have been removed to an Asylum, if not, he should have been discharged.

The Sheriff was instructed to provide a blank book in which the Gaol Surgeon should record his visits to the Gaol, with all instructions respecting prisoners requiring treatment.

The Gaoler was likewise instructed to keep a book wherein to record the punishments administered to prisoners, no matter of how trifling a nature.

53 prisoners were committed to this Gaol during the year, whose support and the maintenance of the Gaol for the same period cost $1,710; prisoners rations 25 cents per day for each prisoner.

Peterborough Gaol.

County of Peterborough.

Statutory inspection was made of this Gaol on the 16th May, on which occasion there were fifteen prisoners in custody, viz., 9 men and 6 women. Two of the latter were committed as being of unsound mind, and although one of them had been in gaol for a considerable period, the papers in her case had not been forwarded to the Provincial Secretary, but as the person did not appear to be a proper subject for Asylum treatment, her discharge from Gaol was recommended. Some of the male prisoners were under sentence for long periods, and for most serious offences. There being no work for them to do they were found in utter idleness in the corridors. Every part of the Gaol was found in the most creditable state of cleanliness and order, with the Gaol regulations well attended to. The gaoler was instructed to lock the cell doors during the day to prevent prisoners from lounging on the beds. The floors were recommended to be oiled. Eighty-two prisoners were confined in this prison during the past year, five of whom were committed as being insane. The cost of the Gaol in respect of maintenance for the same period was $2,451 96, and the daily cost of rations was 13½ cents per prisoner.

Simcoe Gaol.

County of Norfolk.

This Gaol was inspected on the 6th August, when every part of it was examined and found in excellent order, and thoroughly clean.

The practice of entering each and every warrant of commitment for the several offences of *one prisoner* was ordered to be discontinued, as it confused the register, and was apt to mislead.

Only three prisoners were in custody, one of whom was under sentence for larceny, and the remaining two had been committed as lunatics. Although His Excellency's warrant had been issued for the removal to the Asylum of one of these, it was certified by two physicians that he had been restored to a sound mind, notwithstanding this as the prisoner still gave evidence both by his speech and manners of insanity, his detention in Gaol for a time longer was recommended. The other insane man was recommended for transfer to London Asylum.

The escape of three prisoners from this Gaol indicated that carelessness and want of supervision existed in its management, which an investigation amply confirmed. The gaoler and turnkey were dismissed. Eighty-five prisoners were committed to this Gaol during the year, no less than eleven of whom were insane or idotic. The cost of maintaining the prison for the same period was $1,909·68. The daily rations of each prisoner cost ten and a half cents.

St. Catharine's Gaol.

County of Lincoln.

At my first visit to this Gaol, on 6th April, I found 21 prisoners under confinement viz, 14 men and 7 women; and when again visited on 8th August the number had decreased to 19, viz., 17 men and 2 women. A few of the male prisoners, charged with serious offences, were waiting trial, but a large proportion were under sentence for drunkenness and disorderly conduct, and other minor offences. One of the women although committed as being insane, appeared only to be a harmless imbecile, and considering the great number of *really* urgent cases of insanity in the Gaols. her transfer to an asylum could not be recommended. I again called the attention of the authorities to the case of a man committed as a lunatic, but in whose case no certificate had been granted. I recommended immediate discharge from custody, or examination with a view to determine whether or not he was insane.

At both inspections the various wards and cells, together with the domestic departments of the prison were found in the most creditable order, and were thoroughly neat and clean throughout. The several yards attached to the Gaol were examined and found to be neat and well kept.

The regulations in respect to the dietaries and the mode of serving the same are now strictly carried out in the Gaol.

Suggestions respecting a punishment and gaol surgeon's record had been carried out, and the books used gave the requisite information and were well kept. One hundred and twenty-nine prisoners were committed during the year. The expenditures for Gaol maintenance for the same period were $2847·91. The cost of prisoners' rations was ten and a-half cents each day per prisoner.

Sarnia Gaol.

County of Lambton.

This Gaol was inspected on two occasions during the year. At my first visit to it on the 11th January there were seven prisoners in custody.

Every part of the Gaol and the yards were in excellent order, with the utmost cleanliness prevailing throughout.

The attention of the County Council was again directed to the necessity of complying with the dietary regulations, and they were informed that unless immediate action was taken in that direction the rations of criminal prisoners would, in future, be paid for at the rate of twelve cents per day for each criminal prisoner.

At a subsequent visit made to the Gaol at the request of the Chairman of a Committee of the Council appointed to confer with me upon the subject of Gaol dietaries I passed through the old Gaol with the Committee and offered certain suggestions for alterations so as to enable a prison kitchen and store rooms to be provided which met with the approval of the members of the Committee. I have reason to believe that the Council will provide for the necessary alterations, when the rules in respect to diet will be strictly adhered to.

I held an examination into the circumstances connected with the escape of a prisoner

from the Gaol on the 1st December last. The evidence taken and my report thereon was transmitted to the Hon. the Provincial Secretary.

The commitments to this Gaol were nearly thirty per cent. more than the previous year, viz., 167. The expenditures for maintenance amounted to $2,387 70. The daily cost of each prisoner's rations was twenty cents.

Stratford Gaol.

County of Perth.

I inspected this Gaol on the 20th March and again on the 26th August. At both visits all parts of the Gaol were in a thoroughly clean and well ordered state. At my first inspection the Council was requested to complete the unfinished work connected with the alterations and additions to the Gaol—a memorandum of which was transmitted to the County Clerk for submission to the Council. There were then 10 prisoners in confinement—8 men and 2 women—five of the male prisoners had received sentence of imprisonment for periods varying from three to nine months, and would have been all proper subjects for an industrial prison. I examined into the circumstances connected with the escape of a prisoner from the Gaol on the 27th December last, and found that the escape was attributable to the practice of taking prisoners into the yard adjoining the prison to cut wood. The yard not being properly enclosed, it is unsafe to take prisoners into it without a proper guard. Under these circumstances the Sheriff was instructed not to allow criminal prisoners to be taken into it. At my visit on the 27th August there were only five prisoners in custody, two of whom, being idiotic were recommended for transfer to the Idiot Asylum, London.

Fifty-seven prisoners were committed to this Gaol for the year ending 30th September; the cost of maintaining the Gaol for the same period was $2,017 36. The cost of prisoners rations was nine and a half cents per day for each prisoner.

Sandwich Gaol.

County of Essex.

Statutory inspection was made of this Gaol on the 21st March, when every department of it was found in the most admirable order, with the general management of its affairs in a most satisfactory condition.

Having hitherto been compelled, owing to defective construction and various other causes, to report unfavourably of the condition and management of this Gaol, it now affords me pleasure to be able to state that, both in respect to the condition of the building, and the administration of Gaol affairs, they are now in a most creditable and satisfactory state.

There were 27 prisoners under confinement, viz., 19 men and 8 women. Eight of this number were coloured, and one woman was an Indian. Several of the male prisoners were either waiting trial or were under sentence for the most serious crimes. Seven of the sentenced prisoners had been committed for periods varying from 2 months to one year, all of whom would have been proper subjects for transfer to the Central Prison had it been completed.

The attention of the County Council was called to the insufficient means of heating the Gaol, and to the short supply of water.

At my second visit to the Gaol there were 22 prisoners in custody. I passed through the corridors after the prisoners had been locked up for the night: the ventilation of the building was very good. I saw and conversed with every prisoner, from whom no complaints were received. The County Council has provided a number of books for the prisoners.

One hundred and ninety-six prisoners were committed to this Gaol during the past year, eighty of whom were residents of the United States. The cost of maintaining the Gaol for the year was $2,287 37, and the daily cost of each prisoner's rations was nine cents.

St. Thomas Gaol.

County of Elgin.

The County Council of Elgin having instructed an architect to prepare plans and speci-

fications for alterations and additions to the St. Thomas Gaol; these plans were submitted to me for inspection, and were approved of, in accordance with the provisions of the Inspection Act, and tenders for the work were solicited by the Council. A contract was immediately closed for the following work:—

1st. The erection of a stone wall to surround the yards, which are divided for males and females.

2nd. The entire reconstruction of the internal cell work, so as to provide for four corridors and twenty-eight cells. The enlargement of the present windows.

In addition to the work above specified, and for which a contract was entered into, the Council was recommended to enter into a separate contract for the prison ironwork, and for the heating and ventilating appliances for the reconstructed building.

Two inspections were made of this Gaol during the year. At my first visit only two prisoners were in custody, one of whom had been committed as a lunatic, and whose transfer to the London Asylum at once took place.

It having been reported that the gaol-yard walls had been completed by the contractor, and that he was prepared to proceed with the internal work of the Gaol, I recommended that an arrangement should be entered into for the transfer of the County of Elgin prisoners to the London gaol, during the progress of the alterations and additions to the building.

On the question being submitted for the consideration and approval of the Hon. the Attorney-General, he decided that only felons could be transferred from one Gaol to another, under the provisions of the Act, and that even before that class of prisoners could be removed, it was necessary to receive the sanction of the Dominion Government. Under these circumstances the Sheriff was instructed to endeavour to make arrangements for the occupation of one or two cells in the Gaol during the progress of repairs.

Forty-five prisoners were committed to this Gaol during the year. The cost of maintaining the Gaol for the same period was $2,052·20. The cost of rations per day for each prisoner was twenty-five cents, *or more than twice the amount they would have cost if they had been furnished in accordance with the prison regulations*, which will be enforced when the Gaol is completed.

Sault Ste Marie Gaol.

District of Algoma and The Thunder Bay District Lock-up.

These Gaols were not visited during the past year. In accordance with the recommendations contained in my last report a new lock-up has been erected at Prince Arthur's Landing and a gaoler appointed to take charge of it, under the directions and supervision of the Stipendiary Magistrate for the District.

During the past year only twelve prisoners were committed to the Sault Ste Marie gaol; the cost of maintaining which amounted to $971·04, and the daily cost of each prisoner's rations was thirty cents.

Toronto Gaol.

County of York.

Statutory inspection was made of this prison on two occasions during the year, viz., 7th May and 28th August.

At my first visit there were 81 prisoners in the Gaol, of whom 47 were men, and 34 women. Seven of this number had been committed as lunatics. On examination five of them were found to be proper cases for treatment in the Asylum for the insane, to which institution they were at once transferred.

At my visit in August there were 102 prisoners in custody, viz., 45 men and 57 women. Two of the men, who had been committed as lunatics, were removed to the Toronto Asylum. No less than seventy-six of the prisoners found in Gaol on this occasion had been committed for vagrancy, drunkenness and disorderly conduct. I saw and conversed with every prisoner in custody. Two complaints were received and examined into.

All the corridors, cells, and the domestic portions of the prison were examined and found in good order and, with the exception of the east basement, which was close and damp, thoroughly clean and well kept.

The attention of the Sheriff was called to the necessity of framing new rules, defining minutely the respective duties of the officers and turnkeys.

During the past year 1984 prisoners were committed to the Toronto Gaol, being over one-fourth of the entire number of prisoners committed to all the Gaols of the Province for the twelve months.

The cost of maintaining the Gaol for the same period was $14,938·81, and the daily cost of each prisoner's rations was eight and a half cents. On the 30th May, three prisoners escaped from this Gaol. As Commissioner I held an examination into the circumstances connected with these escapes, the result of which is embodied in the following report, which was transmitted to the Hon. the Provincial Secretary:—

Office, Inspector Asylums Prisons, &c.,

Toronto, June 25th, 1872.

Sir,—In compliance with instructions received from the Honourable the Attorney-General under date the 6th instant, I have the honour to report that I have investigated into the circumstances connected with the escape, on the 30th May last, of three prisoners from the Toronto Gaol.

The examination was commenced at the Toronto Gaol on the 6th, but at the close of the first day's proceedings it was adjourned till the 18th inst. when it was again resumed and proceeded with until completed.

I now transmit, for the information of His Excellency the Lieutenant-Governor, copies of depositions taken by me at the investigation, under oath, as Commissioner, together with this my report thereon.

The names of the prisoners who escaped, the date of their commitment, and the offences for which they were committed, were shown by the gaol register, and the evidence of George Lyttleton Allen, keeper of the Gaol, to be as follows:—

1st. John Dougherty committed to Gaol on the 28th April, 1872, and waiting trial on a charge of burglary, and shooting at a policeman.

2nd. Henry Myers committed to Gaol on the 20th April, 1872, and waiting trial on a charge of burglary.

3rd. John McGuire committed to Gaol on the 19th February, 1872, and waiting trial on a charge of larceny.

The evidence of several of the deponents proves beyond doubt that the escapes took place between twenty-five minutes past twelve and ten minutes to one p.m., on the 30th May. It was also clearly proven, both by witnesses and by an examination of the prison, as well as of the implements left at the point of escape, that the prisoners effected their escape by breaking a hole about eighteen inches long, and twelve inches deep, in the wall of the east water closet of the north male corridor, in the third story of the prison. The water closet referred to, projects at right angles from the corridor, and the aperture was made in the east side of the same, and only a few inches from its intersection with the main building.

The articles and means used to accomplish the escape were, a piece of iron about 14 inches long, strong and stiff, which had been unscrewed from the margin of the iron screen enclosing the urinal within the water closet. A piece of iron steam piping about eight feet long, unscrewed from the waste pipe which passes through the adjoining water closet, and carries off the condensed steam. The point of a broken pickaxe about four inches long. Four sheets tied and twisted together and fastened to the iron piping inside the water closet, and suspended through the hole made in the wall by which they descended to the working yard of the prison. A plank torn from the covering of the wall in the working yard, which was placed against the main building, close to the angle where the wall dividing the male from the female yard intersects with the main building. By this plank the prisoners succeeded in getting on the division wall, which they ran along until they came to the point where it joins with the outer yard wall, when they dropped outside and made good their escape.

It appears from the depositions that three prisoners named Travis (who was afterwards hanged), Graham, and O'Leary, on the 31st December last made an opening in the wall of the same water closet, and at the same point, and through it succeeded by nearly the same

means in escaping from the prison into the working yard, but before they could get over the yard wall they were recaptured, and brought back to prison.

Some time before that two prisoners cut the bars of a window in the same corridor, and succeeded in making good their escape. Ever since the escape of Travis and his comrades through the opening made at the same point, it appears, from the evidence, that all the turnkeys employed in the prison looked upon that part of the Gaol as being very unsafe, and in passing through the corridor, they say they frequently examined it.

This distrust however does not appear to have been shared in, or to have been a cause of alarm to Mr. Allen, the Gaoler, for in his deposition he states, that he considered that, in his opinion, the repairs made to the wall, after Travis effected his escape, rendered it perfectly safe for the custody of untried prisoners without a special day guard; and not until Myers, Dougherty and McGuire had made their escape at the same point, did he look upon that part of the prison as being more unsafe than any other portion of the Gaol; although, at the same, he states that he considers the whole prison utterly unsafe.

From the evidence of Turnkey Solomon Cassiday, it appears that he was the last gaol official who visited the water closet through which the opening was made, prior to the escape of the prisoners, he states that he passed through the corridor between eight and nine o'clock that morning for the purpose of locking up the cells after the beds had been made up, and that he went into the water closet, and turned the door half ajar, (which when opened back would partly conceal the openings) and looked at the wall, and found it all right. This evidence is partly corroborated by Turnkey Clark, who went to the water closet a little after six that morning, at which time he says that he saw nothing wrong.

From the evidence it is clear that no turnkey or gaol official entered the corridor in which the untried prisoners were confined, from between eight and nine in the morning until the prisoners had made their escape, or over four hours; the corridor door was opened to let the prisoners out to, and in from dinner, but no official entered or passed through the corridor.

The depositions of the five prisoners who were confined in the same corridor with the escaped prisoners, as to what transpired in the corridor during the time before stated, is singularly, if not suspiciously similar and alike, viz., that the three escaped prisoners, Dougherty, Myers and McGuire, not only on that day, but generally, kept to themselves in the lower division of the corridor; that they sometimes (although not sworn to have taken place that day), endeavoured to enforce that isolation by roughness to the other prisoners; that they (the escaped prisoners) acted on that day very much as on other days; that they (the deponents) heard no unusual noise, nor saw anything that would lead them to suspect that escapes were being contemplated; and that during that time none of them went into the lower water closet, from which the escape was made. This uniformity of evidence was particularly confined to what took place after the prisoners had been locked up in the corridor after dinner, and not over half an hour from the escape. But before dinner the prisoner Rabb states that he did not see Myers for a time.

It is very clear therefore that the hole was made in the wall some time during the four hours that the prisoners were, to all intents and purposes, left alone. And it is equally clear from a close examination of the wall, that the whole work of making an opening and preparing the rope sheets, could with the implements the prisoners had, be effected in fifteen minutes and without a great deal of noise.

It is also clearly proven that the three escaped prisoners, along with the other untried prisoners confined in the same corridor were taken down to the dining room at twelve that day. After dinner they were taken back to the corridor and locked up, and after that they were not seen again by any of the Gaol officials.

The Gaol at many points, is without doubt very insecure and unsafe, and the internal arrangements are exceedingly defective.

That the walls of the most important Common Gaol in the Province should be constructed of brick only eighteen inches in thickness, and that one half of the prison where the cells and corridors are placed, and in which the prisoners are confined, should be exposed to the public and not surrounded by a wall to prevent and cut off communication between the inmates and those outside, are sufficient evidence of this. And the internal arrangement is but little better. In every corridor there is a recess, under cover of which prisoners can skulk out of view, which faulty construction is rendered still more defective by the division of each corridor by an arch thrown across, with a water closet in each division of the corridor. Although

there are twelve corridors in the building, communication between the prisoners can only be prevented by close watching on the part of the Gaol officials, owing to the corridors all opening into a centre hall, between the corridors and which there are only iron gratings. For this reason the male portion of the prison is in too close proximity to the female, and the separation of the sexes, which, in a well arranged and well conducted prison, should amount to complete isolation and seclusion, is far from being complete.

With all these structural defects existing in the Gaol, the duty of constant and active supervision over the prisoners, on the part of every officer of the Gaol became an imperative necessity. That this duty was frequently very carelessly performed, and often utterly neglected, the evidence now submitted abundantly proves.

The escape of three prisoners through the same part of the wall; only five months before, was surely sufficient warning to the Gaoler that what had once been done would again be attempted by determined and ingenious criminals with the fear of many years' custody in the Penitentiary before their eyes.

Although the gaoler states in his evidence that he gave general instructions to all the turnkeys to be careful in looking after the prisoners, the following facts, brought out at the investigation, shews that proper precautionary measures and care were not taken to insure the safe custody of such notorious and determined criminals.

1st. Notwithstanding the previous escapes, the gaoler considered that the repairs made to the wall rendered it perfectly safe.

2nd. No guard was placed over the untried prisoners from the time they were let out of their cells in the morning until locked up at night, during which time they had access to every part of the corridor with all its structural defects and deficiencies.

3rd. For at least four hours of the day on which the prisoners escaped,—between half past eight and half past twelve,—no Gaol official passed through or examined the corridors in which they were confined.

4th. When the prisoners had been locked up in their respective corridors after dinner, every turnkey and Gaol official went to dinner, some of them beyond the Gaol entirely, and all of them outside of the Gaol proper, leaving the prison and prisoners and the prison yards entirely unguarded during that time, when the prisoners escaped.

5th. Both the gaoler and deputy-gaoler (known as head turnkey) were absent from the Gaol at the time of the escape—the former in the City attending Court and the latter at dinner.

6th. No proper or well organized system of searching the prison and prisoners, seems to have been observed, and what was done in that direction was left to the under turnkeys, and did not take place under the observation of the Gaoler or head turnkey.

7th. All the untried prisoners were placed in the same corridor, which enabled confederates in criminal acts, to act and plot in concert, although the gaol officials had been warned of the desperate character of the prisoners who escaped.

In addition to this, it is very apparent that the gaol staff is very imperfectly organized and that some of them are physically incapacitated, owing to old age and other infirmities for properly discharging their duties

After a careful investigation and examination into all the circumstances connected with the escape of the three prisoners Dougherty, Myers and McGuire from the Toronto Gaol on the 30th May last, I am of opinion that it was attributable:—

1st. To the defective construction and arrangement of the gaol, which under certain circumstances, renders the prison unsafe and insecure for the custody of criminals committed for serious offences.

2nd. To carelessness and neglect of obvious duty on the part of the keeper of the gaol and the subordinate officials.

3rd. To lax and imperfect prison discipline, both in respect to the custody and treatment of prisoners, and in the management of prison affairs.

Walkerton Gaol.

County of Bruce.

Inspection was made of this Gaol on the 31st October, when the various corridors,

cells and other parts of the prison were found in excellent order, and thoroughly clean and neat throughout.

The yards were also in very good order, but as the placing of lumber in them, is attended with danger to the safe custody of prisoners; its removal was ordered.

The attention of the County Council was again called to the necessity of dividing off that portion of the yard used for the gaolers domestic purposes, from the prison yard. And as this joint occupation was subversive of Gaol discipline, the immediate action of the council was requested, in order that it should be remedied. The prison floors still remain as previously reported, although, new flooring has been provided, and the sanction of the council obtained for proceeding with the work.

There were five prisoners in custody at my visit, viz. one man and four women. Three of the latter were insane or idiotic: two of whom were recommended for transfer to the London Idiot Asylum, and one to the Insane Asylum. The attention of the gaoler was directed to the violation of the prison rules, which render it necessary for the Gaol matron to be present when the corridors, occupied by female prisoners, are entered.

An investigation, extending over four days, was held by me, as Commissioner, into certain charges preferred against the Gaol officiels by the County Attorney of the County of Bruce. The evidence taken at the investigation was transmitted to the Honourable Provincial Secretary.

During the past year only twenty-six prisoners were committed to this Gaol, five of whom were insane. The cost of maintaining this Gaol for the year was $1,883 52, and the daily cost of each prisoner's rations was, nine and three-eights cents.

Woodstock Gaol.

County of Oxford.

This Gaol was inspected on the 5th August, and found in a very clean and orderly condition. There were then ten prisoners under confinement,—eight men and two women. One of the latter was found to be insane and has since been transferred to Rockwood Asylum. Another woman, who has been a long time in custody in this Gaol, appeared to be a proper subject for the Idiot Asylum. The necessary papers were asked for, with a view to her removal, but as the County Judge refused to certify, she still remains an inmate of the Gaol. One man, who had been committed as a lunatic had evidently been restored to a sound state of mind, was discharged from custody.

It was reported to me that a death had taken place in the Gaol, and that an inquest was held on the body when the following verdict was rendered, viz.—

"We, the Jurors, as well as the Coroner for this District, do unanimously agree that the deceased prisoner, who died in the County Gaol of the County of Oxford, on the evening of the 7th of May, A.D. 1872, died from the effects of a fever *and the want of proper nursing and nourishment*, and that it is the opinion of the Jury that in certain or similar cases a proper sick nurse should be engaged to carry out the doctor's orders, and that it is our opinion that the said deceased prisoner should not have been committed as a dange ous lunatic."

Seventy-eight prisoners were committed to Gaol for the year ending 30th September, for which period the cost of maintaining the Gaol amounted to $3,931. The daily cost of each prisoner's rations was $14\frac{2}{3}$ cents.

Whitby Gaol.

County of Ontario.

This Gaol was inspected on the 15th May and 28th August.

At my first visit there were seven prisoners under confinement, three of them having been committed as lunatics. One of this class—a man—whatever might have been his mental condition at the time of commitment, certainly gave no indications of insanity at the time of my visit. His discharge was recommended. The other two, who were females, were recommended for transfer to Rockwood Asylum. One prisoner was under sentence of death for the murder of his wife.

As no regular turnkey was on the Gaol staff, the Sheriff was requested to appoint one as soon as possible.

At my visit to the Gaol on the 28th August, there were six prisoners in custody, three of whom were lunatics. At both visits every part of the Gaol was found in the most admirable order.

One hundred and forty prisoners were committed to this Gaol during the year, the cost of maintaining the prison for the same period was $2,235·48. The daily cost of each prisoner's rations was nine and three quarter cents.

Welland Gaol.

County of Welland.

Official inspection was made of this Gaol on the 8th April, for the purpose of examining the new prison, with a view to accepting it in its re-constructed state, as the prison for the County of Welland, in accordance with the requirements of the Inspection Act. It was found, however, on going over the Gaol that it would be necessary to have certain additional work done in order to render it perfectly safe and secure.

The corridors of the old Gaol were examined, in which were found seven prisoners, four males and three females; all of the latter were either insane or weak minded.

Statutory inspection was again made of this Gaol on the 7th August, when, although the new prison had been taken off the hands of the contractor some considerable time, and was, with the exception of a few trifling additions, in a complete state, the old dilapidated wing was still occupied by prisoners, with all its serious defects.

After the County had expended so much money in providing Gaol accommodation it was a matter of surprise that a little more promptitude had not been shown by the proper authorities in completing the necessary additional work, in order that the old prison might be abandoned. I recommended that action should be at once taken to enable this to be done.

The Gaol working yard was still in a very disorderly and untidy state, although there were no less than five able-bodied prisoners sentenced to hard labour in custody at that time. The Sheriff was instructed to give orders to have it put in order, and to have all the wood removed from the walls, and piled up in the centre of the yard.

The doors leading into the yard from the court-house rear yard were ordered to be kept locked, so as to completely separate the Gaol from the court-house premises.

The new Gaol kitchen was, at my visit, used for a bed-room, and the prison clothing and stores were not placed in the store finished for that purpose. The Sheriff was instructed to have these rooms occupied for the purposes for which they were intended, so that the cooking and washing might be done by prisoners, under the direction of the Gaol officials.

Nine prisoners were found in custody, viz., 7 men and 2 women, the two last named were found to be insane. One of them had been under confinement for over four months, and at the time of my visit was found in the most miserable condition, being nearly nude, and owing to her dirty habits, and destructive propensities, was confined in a cell bedded with saw-dust, with only rags for bedding, still no steps had been taken either by Sheriff, Judge, or Gaol Surgeon to have an examination made or the statutory papers prepared in order that so urgent a subject might be transferred to an Asylum.

Examination was made into the escape of a prisoner from the working yard of the Gaol, when it was found that it was attributable to carelessness in leaving the prisoner unguarded while in the yard.

During the past year 103 prisoners passed through this Gaol. The cost of maintaining for the same period was $1,561, and the daily cost of each prisoner's rations was 10½ cents.

I herewith transmit the Annual Reports of the Medical Superintendents of Asylums for the Insane; the Principals of the Ontario Institutions for the Deaf and the Dumb and the Blind, and the Physicians of the same; together with those of the Warden, Chaplains, and Surgeon of the Provincial Reformatory, Penetanguishene, each giving an account of their respective Institutions, and the working of the same during the past year.

I have the honour to be
Your Excellency's
Most obedient servant,

JOHN W. LANGMUIR,
Inspector.

Office of the Inspector of
Asylums, Prisons, &c., Ontario.

APPENDIX TO REPORT

OF

INSPECTOR OF ASYLUMS, PRISONS, &c.,

FOR THE TWELVE MONTHS ENDING 30TH SEPTEMBER, 1872.

REPORT OF THE MEDICAL SUPERINTENDENT OF THE ASYLUM FOR INSANE, TORONTO.

J. W. LANGMUIR, ESQ.
Inspector of Asylums, &c. &c.

SIR,—I respectfully submit to you the following report of the Toronto Asylum for the Insane, for the official year ending 30th September, 1872, being the 32nd of the institution from its commencement, and embracing the first quarter of my twentieth year of service, as Medical Superintendent.

The operations for the year just closed have been as follow:—

	Men.	Women.	Total.
Remaining in 1st October, 1871	288	309	597
Admitted since	98	50	148
	386	359	745
Discharged in the year	44	34	78
Died "	27	11	38
Eloped	2	0	2
Total reduction	73	45	118
Remaining in 1st October, 1872	313	314	627

The admissions in the past year have been 26 less; the discharges, including elopers, two more; and the deaths, ten more than in the preceding year.

Nationalities.

The nationalities of the 148 admitted have been as follow:—

Born in England	30
" Ireland	33
" Scotland	14
" Canada	64
" United States	3
" other countries	4
Total	148

The following have been the nationalities of the total admitted since the first opening of the Asylum:—

Born in England	674
" Ireland	1455
" Scotland	600
" Canada	976
" United States	144
" other countries	129
Total	3978

The preceding figures I regard as quite uninstructive, in isolated position. Insanity is an infirmity of our common nature, from which no nationality affords immunity; and its incidence comes nearer to equality in all countries than may generally be believed.

Religious Distinctions.

For the past year:—

English Church	31
Presbyterian	39
Methodist	29
Roman Catholic	36
All others	13
Total	148

For the whole time:—

English Church	1208
Presbyterian	913
Methodist	583
Roman Catholic	932
All others	342
Total	3978

The above figures may afford useful information, if discreetly applied, to the clergy of the several denominations represented; and, perhaps, it may here be respectfully observed, that exultation over the comparative paucity of a denomination is a poor substitute for that visitation in affliction, which was inculcated by the Divine Teacher.

It is a mistake to believe that Sabbath-day preaching to the insane is the best means of religious instruction or consolation. Every case of insanity has its own peculiar delusions and requirements, which are to be learned and ministered to only by means of individual experience. A sermon which may be suited to a miscellaneous congregation of *sane* people, may not be equally profitable to an insane assemblage, however discreetly selected. I have known instances of patients, misapplying, perhaps, the preacher's words, going direct from church service to suicidal attempts. There is one in this house, whose restoration I regarded as consummated, until I had the misfortune of giving her leave to go outside to church. What she there heard horrified her, and has continued to do so. How appropriate the discourse may have been to a congregation free from all taint of insane tendency I cannot say, yet how few congregations may there be in which incubating insanity is absent.

Civil State.

The civil state, as to marriage, of the total admitted, has been:

	Men.	Women.	Total.
Married (including widowed)	952	1220	2172
Single	1137	669	1806
Total	2089	1889	3978

The previous residence of those admitted in the past year, and in all preceding years, is shown in the following tables:—

WESTERN.

	Prior to last year.	Last year.	Total.
Algoma District	2	1	3
*Brant. County	71	0	71
*Bruce "	12	0	12
*Elgin "	46	0	46
*Essex "	28	0	28
Grey "	45	7	52
*Haldimand	36	2	38
Halton	103	3	106
*Huron	88	0	88
*Kent	36	0	36
*Lambton	43	0	43
Lincoln	126	4	130
*Middlesex	96	2	98
*Monk	1	0	1
*Norfolk	30	0	30
*Oxford	45	1	46
Peel	111	5	116
*Perth	70	1	71
Simcoe	114	7	121
*Waterloo	58	2	60
Welland	56	1	57
Wellington	153	9	162
Wentworth	130	4	134
York	325	8	333
City of Toronto	685	34	719
" Hamilton	156	11	167
* " London	25	0	25
State of Michigan	1	0	1
Unassignable, East & West	40	0	40
	2732	102	2834

EASTERN.

	Prior to last year.	Last year.	Total.
Carleton County	40	0	40
Dundas "	11	3	14
Durham "	129	9	138
Frontenac "	49	0	49
Glengarry "	24	0	24
Grenville "	21	1	22
Hastings "	64	4	58
Lanark and Renfrew (3 2)	71	5	76
Lennox and Addington	23	1	24
Leeds	55	4	59
Northumberland	127	8	135
Ontario	114	4	118
Peterboro'	76	3	79
Prescott	18	0	18
Prince Edward	36	1	37
Russell	4	0	4
Stormont	59	0	59
Victoria	20	1	21
City of Kingston	97	0	97
" Ottawa	40	1	41
Rockwood Asylum	1	0	1
Provl. Penitentiary	14	0	14
Province of Quebec	5	1	6
	1098	46	1144

Total, Western and Eastern 3830 148 3978

The Counties marked thus *, in the Western Division, having been assigned to the London Asylum, have sent their insane to that institution, with the exception of a few warrant and pay patients. The Counties and Cities of the Eastern Division, showing low numbers, or none, have, I believe, sent their insane to the Rockwood Asylum.

The one patient from Michigan, in the Western Division table, was, under your permission, admitted exceptionally, into the superior male ward, at the rate of five dollars per week. He was taken home by his friends nearly recovered, on 27th September ult.

The six from the Province of Quebec were, in accordance with the By-law relating to pay patients from other British Provinces, admitted at five dollars per week. Two them were discharged.

As the superior male ward is not yet filled, no objection can be made to occupancy of some of its beds by patients not belonging to Ontario; but the superior female ward is now fully occupied, consequently it can receive no more of this class; and should vacancies be required for the highest rate pay patients of our own Province, those from Quebec Province must, as the bonds given provide, be removed.

Warrant Cases.

The following table exhibits the whole of the cases admitted under warrant of the Lieut.-Governor, from the commencement of this system of disposing of gaol lunatics, in 1869:—

Date of Admission.	Register Number.	Gaol whence sent.	Issue or Prospect.
1869...Aug. 6...	3526	Wentworth	Incurable.
Oct. 10...	3543	Bruce	Do.
" 22...	3544	York	Do.
Dec. 30...	3562	Victoria	Do.
1870...Jan. 20...	3568	Peel	Do.
Mar. 1...	3582	Leeds	Do.
" 1...	3583	Hastings	Discharged 21st January, 1871.
" 15...	3588	York	Incurable.
May 17...	3609	Welland	Do.
July 7...	3623	York	Do.
Sept. 2...	3644	Welland	Do.
" 24...	3650	Wentworth	Do.
" 26...	3653	Lambton	Discharged 25th May, 1871.
" 26...	3654	Lanark and Renfrew	Discharged 21st March, 1871.
" 27...	3655	Norfolk	Incurable.
" 28...	3656	Grey	Doubtful.
Oct. 11...	3660	York	Discharged 10th May, 1871.
" 15...	3666	Perth	Discharged 10th January, 1871.
" 20...	3672	Wentworth	Incurable.
" 20...	3673	Hastings	Incurable, but dischd. 26th July, '71.
" 27...	3682	York	Discharged 2nd April, 1871.
" 28...	3683	Peterboro'	Incurable.
Nov. 4...	3684	Oxford	Do.
" 4...	3685	Durham and Northumberland	Do.
" 12...	3688	Perth	Do.
" 14...	3689	Hastings	Do.
" 15...	3690	Lennox and Addington	Discharged 16th May, 1871.
" 22...	3694	Waterloo	Incurable.
" 22...	3695	Perth	Do.
Dec. 2...	3699	Grey	Discharged 17th March, 1871.
" 6...	3700	Peterboro'	Doubtful.
" 10...	3706	Wentworth	Died 10th January, 1871.
" 10...	3707	Wellington	Died 6th April, 1871.
" 10...	3708	Do.	Incurable.
" 10...	3709	Lennox and Addington	Do.
" 19...	3714	Durham and Northumberland	Discharged 7th December, 1871.
" 27...	3716	York	Discharged 17th April, 1871.
" 27...	3717	Do.	Discharged 26th June, 1871.
" 28...	3719	Ontario	Incurable.
1871...Jan. 3...	3721	Halton	Discharged 17th April, 1871.
" 14...	3726	Peel	Discharged 21st April, 1871.
" 25...	3729	Durham and Northumberland	Incurable.
Feb. 16...	3735	Wellington	Died 19th December, 1871.
" 22...	3736	York	Doubtful.
Mar. 3...	3739	Do.	Incurable.
" 7...	3743	Lincoln	Discharged 7th August, 1872.
" 8...	3744	Wentworth	Discharged 1st October, 1871.
" 9...	3745	Peterboro'	Died 22nd January, 1872.
" 30...	3751	Do.	Doubtful.
" 30...	3752	Do.	Very doubtful.
April 20...	3762	York	Incurable.
" 24...	3764	Wellington	Do.
" 24...	3765	York	Discharged 22nd June, 1871.
" 24...	3766	Do.	Incurable.
" 26...	3768	Carleton	Doubtful.
" 26...	3769	Do.	Died 10th July, 1872.
" 27 ..	3770	Leeds	Very doubtful.
May 4...	3775	Carleton	Discharged 8th May, 1872.
" 10...	3777	Prescott and Russell	Incurable.
" 17...	3778	Wellington	Died 2nd January, 1872.
" 25...	3781	Lincoln	Discharged 2nd May, 1872.
June 9...	3784	York	Idiot.
" 19...	3786	Lincoln	Discharged 14th May, 1872.
" 26...	3790	York	Incurable.
July 4...	3795	Do.	Discharged 6th June, 1872.
" 26...	3802	Hastings	Discharged 23rd April, 1872.
" 26...	3804	York	Incurable.
" 27...	3806	Peterboro'	Do.
Aug. 2...	3809	Carleton	Do.
" 4...	3812	York	Eloped 9th November, 1871.
" 7...	3814	Simcoe	Doubtful.
Sept. 1...	3823	Lanark and Renfrew	Incurable.
" 6...	3826	Ontario	Discharged 3rd July, 1872.
" 19...	3829	Rockwood Asylum	Incurable.
Oct. 13...	3834	Hastings	Discharged 2nd May, 1872.

Date of Admission.	Register Number.	Gaol whence sent.	Issue or Prospect.
1871...Oct. 17...	3836	Durham and Northumberland....	Very doubtful.
" 21..	3837	Ontario	Discharged 15th April, 1872
Nov. 7...	3843	Lanark and Addington.	Very doubtful.
" 22...	3847	Halton	Incurable.
" 23...	3848	Durham and Northumberland.	Doubtful.
" 24...	3849	Lanark and Renfrew	Do.
Dec. 5...	3852	Do.	Incurable.
" 5...	3853	Do.	Do.
" 12...	3855	Durham and Northumberland.	Do.
" 12...	3856	York	Do.
" 30...	3860	Do.	Very doubtful.
1872...Jan. 8...	3865	Durham and Northumberland.	Doubtful.
" 24...	3868	York	Curable.
Feb. 7...	3872	Grey	Discharged 7th June, 1872.
" 13 ..	3875	Peterboro'	Discharged 15th April, 1872.
" 15...	3876	Ontario	Discharged 1st May, 1872.
" 26...	3880	Wentworth	Discharged 20th August, 1872.
" 26...	3881	Do.	Doubtful.
" 28...	3882	Grey	Do.
Mar. 14...	3889	Peterboro'	Discharged 17th May, 1872.
" 18...	3890	Victoria	Incurable.
" 25...	3894	Dundas	Curable.
April 9...	3897	York	Incurable.
" 10...	3899	Durham and Northumberland	Doubtful.
" 10..	3900	Do. Do.	Discharged 25th July, 1872.
" 11...	3901	York	Discharged 6th June, 1872.
" 11...	3902	Do.	Doubtful.
" 11...	3903	Do.	Discharged 12th July, 1872.
" 12...	3904	Leeds	Discharged 11th July, 1872.
" 12...	3905	Simcoe	Doubtful.
" 12...	3906	Do.	Do.
" 12...	3909	Wentworth	Discharged 15th June, 1872.
" 27...	3914	Carleton	Doubtful.
May 2...	3915	Wentworth	Do.
" 2...	3916	Peel	Discharged 2nd September, 1872.
" 4...	3219	Waterloo	Doubtful.
" 18...	3923	Prince Edward	Curable.
" 29...	3927	Durham and Northumberland.	Do.
June 3...	3928	Grey	Incurable—Idiot.
" 3...	3929	Haldimand	Discharged 25th July, 1872.
July 3...	3946	Durham and Northumberland.	Probably curable.
" 11...	3947	Lincoln	Doubtful.
" 15...	3949	Algoma	Discharged 2nd September, 1872.
" 29...	3953	York	Doubtful.
" 29...	3954	Do.	Incurable.
" 29...	3955	Simcoe	Do.
Aug. 7...	3956	Ontario	Curable.
" 20...	3958	Durham and Northumberland.	Incurable.
" 20...	3959	Do. Do.	Do.
" 27...	3961	York	Doubtful.
Sept. 10...	3957	Grey	Incurable.
" 24...	3964	Wentwosth	Doubtful.
		Total	127

Of the preceding 127 warrant patients, 6 have died, 1 has eloped, and 38 have been discharged, thus leaving 81 still resident; of these 81, 49 may be designated as certainly incurable, 22 as doubtful, and 5 *very* doubtful. The curable, and probably curable, amount to only 6. I think there can be no doubt that, should the system of transfer by warrant, from the gaols, be continued, there will very soon be no available beds for other cases; and it is well known to me that gaol lunatics are by no means the most dangerous or troublesome; whilst, with regard to improvement of the asylum finances, all that will be collected for support of the few warrant patients, *said* to be able to pay, will be very trifling. The injustice of depriving of asylum benefits those who have contributed most to the erection of our buildings, and who would pay for their asylum maintenance, simply in order to empty the county gaols (which, practically, means to draw into them *two* for every *one* taken out), seems to me a great evil. To fill our beds with incurables is but to multiply the numbers of this class, by excluding curables. In May last a woman, aged 70, died here after nearly ten years'

residence. She was sent in from gaol as a *dangerous* lunatic. As well might the local authorities have laid hold of the first child to be met on the streets, under this charge. Allowing the *long* average of 12 months for residence of curable patients, this woman, when all beds were full (as they almost constantly are, and many acute cases are kept out from want of vacancies), would represent ten probably curable, converted by delay into incurable, lunatics. It seems, however, to be impossible to make on the public mind any rational impression in relation to this evil. The friends of really dangerous and troublesome lunatics, who undergo untold and untellable hardships in guarding them at home, and who submit to any amount of trouble and expense, rather than send them to goal, readily admit the injustice and impolicy of keeping *out* such cases; but the friends of the chronic and incurable insane, and the local authorities, fail to view the matter in the same light. Truly, the difficulty of disposing of a paucity of vacancies among a multitude of importunate claimants, is the most harrassing of all a medical superintendent's duties. It is impossible to oblige all, and it would be unjust stewardship to avoid making enemies at the expense of conscience and discriminating humanity.

Paying Patients.

In my last annual report, I furnished a return of the paying patients of the institution from which it appeared that a revenue of over $13,000 was derivable from this class, and I predicted that a gradual augmentation would take place. During the year since elapsed, the following have been the movements of paying patients:—

At $3 per week, admitted		6
" discharged		5
" died		2
Decrease		1
At $2 per week, admitted		21
" discharged		14
" died		2
Increase		5
At $4 per week, admitted		23
" discharged		12
" died		3
Increase		8
At $5 per week, admitted		1
Increase		1
At $1 per week, discharged		1
Decrease		1
Total increase	5 at $2 =	$520 per annum.
"	8 at $4 =	1664 "
"	1 at $5 =	260 "
Increase		$2444 "
Total decrease	1 at $3 =	$156 "
"	1 at $1 =	52 "
		$208
Net increase		$2236

ADMISSIONS.

The total applications for admission in the year have been 282, and, as the admissions have been only 148 it is easy to perceive arrearage has been fallen into. All applications by Sheriffs for warrant cases have been promptly met; but as these have been, with two exceptions, exclusively females, no injustice has yet been done, unless prospectively, and of this there can be no doubt. Of the 134 unadmitted, 37 were awarded admission, but their friends declined to avail of the vacancies offered. A few politely acknowledged the letters of award, but the majority, as usual, observed silence.

The following figures represent, approximately, the character of the 148 cases admitted in the year:—

Discharged	39
Died	6
Remaining—curable	13
" doubtful	31
" very doubtful	14
" incurable	45
Total	148

Of the 39 discharged from patients admitted within the year, 32 had recovered, 6 were improved, and 1 was unimproved. Those not recovered were discharged by desire of their friends.

The number of Paretics admitted in the year has been only ten, against 17 in the previous year, and 4 of the 10 have been in women—certainly a very unusual proportion, and almost equal to the whole female cases of eighteen previous years. It is needless to say that all, of both sexes, will prove uncurable.

The like prognosis may be given of the epileptics admitted, as well those of the last year as of almost all preceding.

It may not be out of place here to observe that some warrant patients, stated by gaol surgeons to be free from epilepsy, have been found to be subjects of this malady; one, of whom, as to this disease, the gaol surgeon's report was, "do not know," had a severe fit the second night after admission here, and he is certainly one of the most violent epileptics in the asylum. The gaol attendants surely were not very close observers, or they must have been very reticent towards the doctor.

The number of epileptics now in is 26—males, 20, females, 6. Of the latter, one was certified to have been epileptic before admission, but she has never had a fit here, though resident over five years. The disparity between the number of male and female epileptics may be deserving of attention. As to the cause, I prefer to be silent. Not long since a young epileptic died. The description of the case given by the medical applicant, clearly showed it to be one of severe epileptic mania. I felt it to be my duty to request that the parents be apprized of the hopelessness of the case; but the applicant wrote to me he had discovered another exciting cause which rendered the case less unpromising. Should I name this mitigating agency, no asylum tyro could suppress a smile.

Among the cases admitted have been four of dipsomania. It is doubtful whether mental aberration of this sort falls legitimately within the nosology of insanity. Certainly, the four cases sent into this asylum in the past year were but of ephemeral duration, so far as might be concluded from the manifestations of mental incompetence. One showed no insanity whatever after admission; a second showed merely that depression of animal spirits consequent on deprivation of other spirits; the other two, having indulged copiously up to the hour of entrance, appeared crazy enough to impress their medical examiners with conviction of their insanity. Asylum physicians can hardly accord to mental alienation of this sort a legitimate position in the ranks of true lunacy. They are not accustomed to see lunatics subsiding into rationality within a few hours, or days after entering; and their doubts cannot be weakened by knowledge of the fact, that the great majority of lunatics coming under their charge have been persons of temperate habits. Of the 148 patients admitted in the past year, 14, including the 4 dipsomaniacs, were certified to have been, generally or occasionally, intemperate, and 5 to have become so after manifestations of insanity. The remainder

have been stated to be temperate, and I am satisfied of the correctness of the certificates in this relation. Medical examiners are not liable to error in so palpable a fact.

That some provision for the care and proper treatment of inebriates is badly wanted in this Province, there can be no doubt; but that these unfortunates are fit inmates of a *lunatic* asylum, every one who has had them in charge must regard as an absurdity and a cruelty. Within 24 or 48 hours after entrance, they find themselves mixed up with mental wrecks as diverse from themselves as midnight from noon-day sun-burst. Can such association conduce to self-respect or good moral resolve? One fact, at least, is certain; their insane companions are not improved by their presence. Dissatisfied themselves, and too often disposed to magnify the causes of dissatisfaction which the discipline of an insane hospital unavoidably presents, their dissatisfaction becomes contagious. One dipsomaniac may upset the comfort and quietude of a whole ward. Assuredly, the physician whose fate it is to minister to their form of mental disease enjoys no sinecure. He may hourly meet, and parry off, the importunities for liberation of those of dethroned mind, who are easily diverted from one subject to another, and who, by adroit management, may be parted from in smiles and renovated content; but it is not so with the de-alcholised inebriate. Many of this class, perhaps the great majority, are persons of superior mental capacity and culture, and the asylum physician who tries to liberate himself from the meshes of their logic and plausibility, by any of his stereotyped shiftings of position, finds himself awkwardly at fault. They will hold him to their primary point and purpose, and he must escape from the discussion a discomfited, if not sometimes an irritated, combatant, for they understand how to be offensive. Their insane associates see his disadvantage, and some of them do not fail to rejoice in it.

When one approaches the subject of provision for inebriates, its magnitude is almost disheartening. There are more inebriates than lunatics in this Province requiring benevolent protection; and there are more families suffering under the consequences of intemperance, than under all the domestic horrors and disquietudes of insanity. If every tavern in Ontario represents only *one* inebriate, requiring asylum provision, this estimate falls far short. Restoration of the curable insane, when they are timeously submitted to asylum treatment, is not a very tedious process; but the reclamation of inebriates is not to be achieved in any brief period of time. It is, I think, the belief of all physicians of inebriate asylums, that isolation from all possibility of temptation for one year at least, or, much more likely for complete cure, for two years, is indispensable. To those who are able to pay for the redemption, the expenditure is a good investment. But what are the pecuniary remaining means of the vast majority of inebriates, whom public opinion and magisterial judgment would consign to asylum seclusion? It is useless to expend mere sentimental ventilation on a matter involving so huge a fiscal requirement, and to overlook the reluctancy of our people to undergo augmented taxation. We may "call spirits from the vasty deep," but they come not at our call.

Lunatic asylums are in all countries costly edifices (even the fifty per cent. ones), but inebriate asylums, such as I have yet seen, are still more costly, and are more costly maintained. The inebriate asylum at Binghamton, New York State, charges ten dollars per week to all inmates belonging to the State, and twenty dollars to all from outside the State. Of what utility to the vast majority of inebriates would such an asylum be in our Province? Verily, if this subject is to be discussed with any prospect of a rational practical solution, it must be rationally and practically approached. All philanthropic movement, in this region, means increased taxation. Let us then proclaim the need and the want in one breath. This will save time and economise eloquence. But our philanthropy is spasmodic, and becomes tranquilized when an incorrigible drinker is consigned to gaol, or sent thence to infest a lunatic asylum. This is cheap charity, and, therefore, it is a permanent epidemic.

Discharges.

The discharges of the year have been 78—the same number as in the preceding year. Two elopements being added, they amount to 80. Calculation of percentages, either on the admissions, or on the total under treatment, is hardly worth the trouble. An asylum which would build up a reputation from its statistic tables, is on the wrong road to public good opinion. The good results of humane and skilful treatment of insanity are not to be sought for in figures. The sagacious visitor will prefer inspection of the dinner-tables, and substantial assurance of general bodily and mental comforts.

If he visits from time to time, and marks the progress made by the acutely insane, from automatic fury, or persistent restlessness and clamour, back towards rational calm and normal demeanour.—if he sees the chronic insane cheerful, industrious, docile, and on easy terms of intimacy with their guardians and attendants he will care little for the figures, or the figures of speech, of printed reports.

An asylum which receives a large number of recent acute cases will show a large number of recoveries, and it will probably show a high death rate. On the other hand, an asylum which can, from the occupancy of nine-tenths of its beds by incurables, who must continue its pensioners for life, present but an inadequate supply of accommodation for new cases, will receive many of these in the chronic stages. It will therefore show poor figures in its table of discharges.

In Canada we perhaps err on the right side, in retaining, for life, those who fail of recovery of reason; but we should not shut our eyes to the cost of the system, nor to its consequences on the recently insane. If we are to perpetuate the system, we must go on building new asylums. We should not procrastinate, for assuredly delay is but the equivalent of accumulation of incurables, who might have recovered if timely subjected to proper treatment. The mental condition of 78 discharged in the past year was as follows:—

Recovered	57
Improved, and much improved	17
Unimproved	4
	78

The two who eloped were in a state of fair mental competency. One was so rational as to make his way to Buffalo, and there to resume his occupation as a skilful machinist, at good wages. His insanity was manifested exclusively in jealousy of his wife, unfounded, no doubt, as all jealousy usually is.

The second eloper had become, by repetition, an expert in the process. He finally made himself a key of tough wood, and let himself out, at a suitable time in the evening. He was pursued unsuccessfully. I learned subsequently his whereabouts, but the farmer for whom he was working, declared he was not insane, and would not part with him.

As our Statutes relating to confinement of lunatics in asylums, are silent on the subject of capture of elopers, whilst, I believe, those of England make definite provision for this necessary service, it might be well to amend ours in this relation. It is to be hoped the time will never come when the insane will be unable to elope from asylums. I can imagine no more direful reversion of our modern system of treatment, than this impossibility would involve. Nor is it to be believed that successful elopement is never attended with good result. I have known more than one instance, in which recovery of mental power was produced by this achievement. Had these patients been captured, and brought back to closer asylum surveillance, who will assert that they ever would have become, as they did, rational, self supporting members of society?

Not long since the sister of a patient who eloped from an outside working party, and, after a two days ramble, returned of his own accord, expressed her astonishment that any one could escape from this asylum: yet almost in the same breath she told me it took four or five to watch him at home, and bring him back from his wanderings. What this woman's sylvan conceptions of asylum government have been, may not be difficult to surmise. I asked her—did she believe she was herself too stupid to be able to escape. She much approved of our giving her brother plenty of liberty, but she could not see that this implies facility for escape.

When the friends of patients whose recovery is not considered complete, or confirmed, urge for their discharge, I occasionally assent, under stipulation, that should they be found unfit to reside at home they may be brought back within a limited specified time, not to exceed, at most, four weeks. The general result has been satisfactory, the exceptions having all been in those taken out contrary to advice. I do not, of course, exercise any such discretionary power in the cases of warrant patients; but, as you are aware, the Lieutenant-Governor has occasionally authorised the actual discharge of such of this class as may have been found to be quiet and harmless, provided their friends engage to take proper care of them. It is my belief this system of trial of chronic cases, will be found very desirable when the arrearage on the applications' list becomes heavy, as it very soon will.

Of the discharged designated *improved*, two who were taken out contrary to advice, were, after several months, readmitted, under fresh certificates; one was removed to be placed in a private asylum; the remaining 14 have been retained at home. So long as they get on smoothly, their friends will not inform us of their condition: therefore their silence is equivalent to a good report.

Of the 4 discharged unimproved, three were taken home by their friends in this city. One of these was in the last stage of consumption, and one in the last stage of paresis; the third was nearly moribund, in marasmus. The fourth was in good bodily health, and was taken out by her husband, to return to Ireland.

During the year 18 re-admissions of persons who had previously been patients, were made. The following were the intervals between the dates of discharge and re-admission:—

			Years.	Months.	Days.
1	2nd	Admisssion in Rockwood, in Interval	11	5	0
2	9th	"	16	3	0
3	2nd	"	18	0	0
4	2nd	" A paretic.	1	7	0
5	2nd	" Has been again discharged	1	11	0
6	2nd	"	9	0	0
7	3rd	" Dipsomaniac.	1	0	0
8	3rd	" Doubtful case. In Rockwood in Interval	8	0	0
9	2nd	" In London in Interval	3	3	0
10	4th	" Relapse from Intemperance	1	2	0
11	2nd	" Died in five days	3	5	0
12	2nd	" In Rockwood in Interval	16	3	0
13	2nd	"	14	1	0
14	2nd	" Taken out contrary to advice	"	5	0
15	2nd	" Dipsomaniac.	"	2	0
16	3rd	" Insanity returned, from harsh treatment of relatives	"	4	6
17	2nd	" Taken out too soon	1	3	0
18	2nd	" Taken out contrary to advice	"	2	19

Taking, for comparison, the admissions and discharges of the last five years and three months, it appears that the discharges of males have been to admissions, in the ratio of 50 in the hundred, and of females 56 in the hundred.

	Males.	Females.
Admissions	360	306
Discharges	180	173

The average asylum residence of 78 discharged, and two eloped in the year, has been 9 months and 17 days; but striking off four unrecovered discharged patients and 1 eloper, making an aggregate of 26 years, 4 months, and 26 days, the average for the remaining 75 is reduced to 5 months and eighteen days for each.

Deaths.

The deaths in the past year exceed by 10 those of the previous year. The total number of patients under treatment exceeds that of the previous year by 42. The ratio of mortality on the whole under treatment in the last year, has been $5\frac{1}{10}$ per cent against, in the previous year, 4 per cent. The mortality in the average number, 617, resident in the last year has been $6\frac{1}{5}$ per cent. In the previous year $5\frac{8}{10}$ per cent. The aggregate mortality in the past five years and three months has been, of men 82, of women 77. The average of resident males, in the same period, has been 252
and of females 294

The average annual rate of mortality on the average of resident male and female patients in the above period has been,
Of males ..... $6\frac{3}{10}$ per cent.
And of females ..... 5 "

It would appear, from the preceding figures, that insane women live longer than insane men; and if this fact obtains generally, it should follow that a larger number of chronic cases of women, than of men, will remain in life after a given period of residence.

In some years we find a predominance of mortality in one sex over the other, for which, to figure hunters, no pacifying explanation can be given. In the past year this discrepancy has been very striking,—the deaths of men having been 27, and of women only 11.

The following figures, however show a strong tendency to compensation:

						Men.	Women.
Deaths in	15	months	ending	30th Sept,	1868	16	14
"	12	"	"	"	1869	9	17
"	"	"	"	"	1870	14	23
"	"	"	"	"	1871	16	12
"	"	"	"	"	1872	27	11
						82	77

The simple truth, I believe, is that *all* have to die some time, and that we keep them in life as long as we can. Those who may have died in a past year, will not augment the next year's bill of mortality; and some who may have been bridged over the past year, must drop through in the coming one.

OBITUARY TABLE.

Register No.	Sex.	Date of Death.			Time Resident. Ys.	Ms.	Ds.	Age.	Original Form of Insanity.	No. of P. Mortem.	Proximate Apparent Cause of Death.
3735	M	1871	Dec.	19	0	10	13	45	Dementia	.....	Exhaustion. Brain disease from kick of a horse.
3679	"	"	"	21	1	1	25	45	Mania of Paresis	.....	Paresis.
2345	F	"	"	25	11	5	2	60	Recurrent Mania	.....	Disease of Liver. Herematemesis, &c., &c.
3778	M	1872	Jany.	2	0	7	16	21	Dementia	328	Latent Phthisis.
2991	"	"	"	9	7	2	15	58	Mania	329	Exhaustion.
3657	"	"	"	18	1	3	"	36	Mania of Paresis	.....	Paresis.
2013	"	"	"	21	14	1	0	57	Mania	330	Hypestrophy of Heart.
3745	"	"	"	22	0	10	13	37	Mania	.....	Disease of Liver, and Broken-down Constitution.
2506	"	"	"	23	10	8	2	58	Dementia	.....	Disease of Kidneys and Stomach.
3641	F	"	"	24	1	4	25	25	Dementia	.....	Manifest Phthisis.
2940	M	"	Feb.	2	8	3	13	35	Mania	.....	Latent Phthisis.
2435	"	"	"	14	12	0	30	68	Mania	.....	Exhaustion.
697	"	"	Mar.	3	23	5	29	66	Mania	331	Latent Phthisis.
3833	"	"	"	14	0	5	4	45	Dementia	332	General decay, finally Pulmonary Congestion.
3887	"	"	"	14	0	0	5	36	Mania	.....	Maningetis, and too much chloral before admission.
3214	"	"	April	9	6	2	8	35	Mania	333	Marasmus.
3168	"	"	"	24	6	9	29	32	Mania	.....	Latent Phthisis.
2718	F	"	"	25	9	9	11	70	Dementia	.....	Age and Exhaustion.
920	"	"	"	25	22	0	0	80	Mania	.....	Do. Do.
2700	M	"	"	29	9	10	15	79	Mania	.....	Do. Do.
3380	F	"	May	1	4	4	"	53	Dementia	335	Laient Phthisis.
3858	M	"	"	8	0	4	16	70	Senile Mania	336	Age and Exhaustion.
3883	"	"	"	20	4	4	21	49	Mania of Paresis	.....	Paresis.
3227	F	"	June	13	6	2	8	42	Mania	337	Latent Phthisis.
3459	M	"	"	16	3	8	9	53	Mania of Paresis	338	Paresis.
3822	"	"	"	30	0	10	1	58	Melancholia	.....	Exhaustion.
3807	"	"	July	2	0	11	12	51	Melancholia	.....	Disease of Stomach and Kidneys.
3769	"	"	"	10	1	2	14	36	Mania	339	Disease of Heart.
3668	F	"	"	11	1	8	24	34	Mania	.....	Manifest Phthisis.
3948	"	"	"	16	0	0	5	29	Recurrent Mania	.....	Exhaustion of acute mania. Meningetis.
2865	"	"	"	27	9	3	3	29	Mania	340	Latent Phthisis.
3884	M	"	August	20	0	5	19	16	Quasi Idiocy	.....	Exhaustion of epilepsy and evil habit.
3175	F	"	"	22	7	1	3	58	Mania	.....	Manifest Phthisis.
2440	M	"	"	23	11	6	25	47	Dementia	341	Valvular Disease of Heart.
3820	"	"	"	25	1	0	1	48	Mania of Paresis	.....	Paresis.
3922	"	"	Sept.	1	0	3	15	35	Melancholia	.....	Exhaustion.
3158	F	"	"	21	7	3	26	43	Recurrent Mania	342	Latent Phthisis.
3602	M	"	"	22	2	5	19	63	Dementia	.....	Exhaustion.

The preceding obituary table contains all the information that can be compressed into this shape, but it affords only a very meagre representation of the important facts of each case.

It appears that eleven deaths resulted from pulmonary phthisis,—or twenty-nine per cent of the whole. Of these eleven, only three cases were of the *manifest* form; the other eight presented not the ordinary symptoms of consumption.

I am convinced that the asylum tables of mortality of this country present a very imperfect return of the number of deaths from pulmonary consumption. Dr. Gray, of the Utica Asylum, in his last report, gives seventeen cases, in a total of sixty-one deaths; which is equal to 29½ per cent. if all the other asylums would follow the example given of late years by Dr. Gray, in frequent *post mortem* exploration, their obituary tables would be of more value than they yet have been.

Dr. Dickson, of the Rockwood Asylum, assigns six out of eighteen deaths to phthisis or 33⅓ per cent.

Dr. Howden, of the Montrose Asylum, gives six out of twenty-seven.

Dr. de Wolf, of Halifax, shows an aggregate for twelve years, of forty-five in one hundred and thirty-eight.

Dr. Reid, of the Western Pensylvania Asylum, gives thirteen in thirty-eight.

Dr. Landor, of London gives four in fifteen.

Dr. Langdon, of Longview Asylum, gives one hundred and fifty in three hundred and eighty-five—perhaps too high a proportion.

Dr. Earl, of Northampton, gives for 1870, nine in thirty-three.

When one turns from these figures, to those presented in some other reports, it is hardly possible not to be astonished. We might be induced, from the apparent paucity of cases in many American asylums, to believe that consumption is a rare disease among the insane, and of course, still more so among the sane; but the contrary is too true.

The intimate relation between pulmonary consumption and insanity is deserving of the most attentive consideration, and certainly calls for more thorough investigation than appears yet to have been given to it. I believe it will be found, if we institute a searching enquiry into the morbid history of the families, or blood relations of our patients, that, in a very considerable proportion, pulmonary consumption, or some germane form of tubercular disease, has obtained. Should the happy period ever arrive when this disease shall be eradicated, insanity will then be vastly curtailed; but not until then.

The assigned causes of death in the twenty-two not accounted for by consumption and paresis, are various. It is quite impossible to give succinctly any satisfactory description of the multiform factors of dissolution in the insane. It is of the rarest occurrence to see a case that ends fatally from any *one* form of disease.

In some the whole animal fabric appears to have been undergoing gradual disintegration, and it is impossible to locate the death cause, in any one organ. In others the apparent proximate cause has been but the necessary sequence of a prior morbid condition, which, in the final debacle, has perhaps utterly passed out of view.

The average asylum residence of the thirty-eight who died in the year has been five years and twenty-seven days each.

Two, however, died in five days after entrance, and nine others in less than twelve months. The longest residence was 23½ years. This patient ultimately sank under latent phthisis. He was the well known blind man, who rejoiced in the possession of all the highest titles of the British peerage; and he would have stood in the Hierarchy many degrees above St. Patrick, had he not declared himself that very personage. His absence has been felt not a little. Take him for all in all, this asylum will never hold his equal.

The Farm.

Our farming operations have been pushed on with vigour and assiduity. Owing to the general drought of the season, the aggregate crop, through a moderate average, will fall below our hopes. The crop of hay will be insufficient for the stock. Oats and oat straw have been a heavy crop. Potatoes were not assailed by the Colorado beetle, until too far advanced to be much injured by it; but though our workers made fierce war on these invaders, we must not expect to escape so fortunately next year. This pest will travel eastward, impelled by the

hunger created by its devastations. The present crop of potatoes, not having yet been all raised, I cannot state the quantity, but the quality is good.

In our Mangold Wurtzel crop we fall short, in consequence of supply of effete seed, from one of our city seedsmen, whose character I had always before regarded as abundant guarantee for every article sold by him,—I think he should have known better. Not a single grain of his seed germinated; whilst that raised by ourselves proved all good. A neighbour gives the same account.

The crop of apples is very far below that of last year. Upon the whole, we are not, perhaps, worse than our neighbours, and in some respects rather better.

A large extent of tile drainage has been done on the new farm. As this improvement costs only the price of the material, it is, certainly, very remunerative. Our workers have now been educated into scientific cutters of drains, and layers of tiles. Rough diagrams of the drains of every field are laid down in my asylum journals, so that at any time they can be readily traced on the land.

Tough Beef.

I have long been of opinion, from the observance of the bad teeth of many of our patients, and from the extreme paucity of my own, that flesh meat, less resisting than that supplied by contracting butchers, would be a great boon to this house. Many of the asylums of America and England have their own slaughtering establishments. If it could be so arranged here, a good deal of grumbling might be averted. It could make no difference to the animals; therefore I can see no reason why the experiment might not be made.

Repairs, Alterations and Improvements.

It is not necessary here to reiterate the several works under this head now needed. These are best considered and discussed, during your personal inspection of the institution.

I cannot refrain in this relation from noticing an utterly unfounded assertion of the Architect of Public Works, made in a report of that gentleman to the Honourable Commissioner of the Department, under date 26th January, 1871, in which, when endeavouring to refute certain statements made by the Medical Superintendent of the London Asylum, he avails of the occasion to deal to me, as he seems to have believed, a killing side-blow. The following is the passage to which I allude:—"I am induced to make these remarks, as an instance occurred recently in the Lunatic Asylum, Toronto, where the Medical Superintendent proposed to close the ventilators over the doors leading to the apartments from the corridors in the wings, by which the ventilation and heating of the wings would be impaired, and which I brought under the notice of the Inspector of Asylums, who promptly interfered to prevent any change." In every essential particular, except, perhaps, that of the Architect's representation to you, the preceding statement is untrue. Why Mr. Tully found it necessary to strengthen his defence against Dr. Landor's allegations, by exposure of my ignorance, I leave to himself to explain. I had fondly hoped that my past relations with him might have screened me from animadversion, even had I *made* a blunder—for I have not proclaimed all his—but I suppose these little caprices of left-handed gratitude may be permissible, at a certain official elevation. Perhaps the whole thing is but a matter of taste, and, as the old adage has it, "*de gustibus non disputandum est.*"

It may relieve the Architect's anxiety to be now informed that none of the evil results predicted by him, followed the alteration, made by me under your sanction. On the contrary, the improvement was palpable, and very valuable.

General Health.

The general health of the establishment has been good throughout the year. No epidemic of any kind has presented. I deemed it advisable, during the prevalence of small-pox in the city, to re-vaccinate a large number of the inmates, and whether owing to this precaution, or to the general course of events, no case of the disease occurred.

Religious Services.

The ordinary religious services of the Institution have proceeded with the wonted regularity and satisfaction.

Newspapers, &c. &c.

The Institution still continues under obligations of gratitude to the publishers of newspapers and periodicals for their kind gratuitous supply. The following is a list of those regularly received.

Toronto Leader, daily and weekly.
London Herald and Prototype, do. do.
Ottawa Citizen, do. do.
Chatham Planet, tri-weekly.
Christian Guardian, weekly.
Canadian Freeman, "
Guelph Herald, "
" *Mercury*, "
Galt Reporter, "
Stratford Beacon, "
Berlin Telegraph, "
Ingersoll Chronicle, "
London Advertiser, "
Christian Advocate, "
Walkerton Telescope,, weekly.
Collingwood Enterprise, "
" *Bulletin*, "
Uxbridge Journal, "
Chronicle and News, "
Elora Observer, "
Lightning Express, "
Canada Statesman, "
Witness, Montreal, (2 copies), weekly.
Church Herald, "
Canada Presbyterian.
Monthly Record.
Journal of Education.
Court Journal.

Humbly trusting to the Almighty Disposer of all human affairs for a continuance of His blessings on this great public charity,

I am, &c , &c.
JOSEPH WORKMAN, M.D.
Medical Superintendent.

REPORT

OF THE

MEDICAL SUPERINTENDENT

OF THE

LONDON LUNATIC ASYLUM.

London Asylum,
October 1st, 1872.

J. W. Langmuir, Esq.,
Inspector of Asylums, &c.

Sir,—It is once more my duty to send you a report of the condition of this Asylum. If I have to regret delay in remedying the bad state of the ventilation and drainage, and in repairing defects of workmanship, it is a source of satisfaction that the evils that might have resulted, and which will assuredly result, if the present condition should last, have not yet affected the general health of the patients. Diarrhœa has been very persistent during the whole year, but it has not degenerated into cholera, nor caused death. The tables show that our death rate has not been excessive. It is for the year $4\frac{3}{4}$ per cent. on the total number under treatment; not a very excessive rate, and much less than the earlier months of the year seemed to promise. During the first three months many of the feeble patients passed away. Our discharges in proportion to the admissions have been about 40 per cent. cured and improved, and two unimproved.

Reference to the tables will show that many of the admissions have been long-established chronic cases, which had little prospect of cure. But the discharges also exhibit some cases of long duration; one case of eight years being cured. Every year it is our lot to urge relations to bring their friends to the Asylum in the early stages of their affliction; but, like the wailings of the prophets of old, we cry out to a deaf and untoward generation, and under all sorts of pretexts, the insane are kept at home until cure is nearly hopeless.

Some of our cases possess unusual interest; one of hysteria in a child is discussed in the *Journal of Insanity*, having formed the subject of one of our sittings at the meeting of the Association at Madison. As it will be found in the *Journal*, I need not allude to it further. We have had one operation for a strangulated femoral hernia, successfully done by my friend Dr. Cattermole. Four elopements have taken place of patients not recaptured. Three of these have been patients who would soon have been discharged as cured, and ought to be reckoned in the cures. It is the custom to send patients who are recovering into the fields to work, and to depend more or less on their promises to wait for their discharge until the cure can be pronounced complete. These people are naturally in haste to get home, and they break their promises and elope. No trouble is taken in such cases to recapture them, as they have only anticipated their discharge a few weeks before it would have been sanctioned. The other two are warranted cases, and are therefore prisoners in the eye of the law, who would have been recaptured if the lawful method of proceeding had been pointed out to the

Superintendent. 103 men have been occupied daily, either in the house or out of it. The table points out the nature of their employments. Occasionally many others have employed themselves in picking stones off the farm, or rolling the grass and walks, not included in the above numbers.

153 women have worked more or less daily. Many of these are spinners of wool and knitters of stockings, and occupied in repairing clothing in the wards. The others in the table are the regularly occupied every day. I think we have not much to complain of on account of idleness, for the record shows as many employed patients as are usually found in Asylums. More may be trained to some trifling occupation or other; but you well know that this is one of the difficulties we have to contend with constantly, and which causes more changes amongst attendants than any other reason. Our payments are not so high above the wages that can be earned by hard labour outside the Asylum, as to induce men or women to engage in equal hard work in the Asylum. As our hours are necessarily long, we must have some extra inducement to make attendants undertake long hours and hard work together, and therefore when we insist on both, they will prefer hard work in other occupations, with briefer hours; so we lose them when we most want them, and we have to begin again the same round of instruction with every change of people. There is no remedy for this except such high payments as we cannot expect will be granted.

DR. LETT'S REPORT ON THE MEDICINES USED.

To the Superintendent.

Dear Sir —At your request I beg to submit the following report on medicine used in this Asylum during the past twelve months.

Since this time last year the use of drugs for the purpose of producing quietude has rather deteriorated in my estimation. Having taken advantage of the valuable suggestion made by you in your last report, "that a bottle of good Scotch ale or Dublin stout was fully as conducive to sound sleep as a dose of chloral," I devoted my attention to this plan of treatment; therefore sedatives, such as are commonly prescribed, have been little used, and the results obtained are quite as satisfactory, if not more so, than last year. I am rather over the mark than under when I say a pound of chloral has not been administered during the past twelve months, and bromide of potash in like proportion; while I am sure in that time we have had as many excited, destructive and restless cases as previously. I do not wish you to be impressed with the idea that alcoholic stimulants have been used as direct sedatives in these cases in excessive quantities. A glass of wine, or, what I more frequently use, a tumblerful of hot toddy, when the patient is in bed, is the largest quantity I have ever given at one time. The effect of this is not so direct or prompt as thirty or forty grains of chloral; but it has the advantage of tending to restore the vital powers, while sedatives are more or less depressing. Medical treatment has resolved itself chiefly into stimulants and tonics. Cod-liver oil and iron have been the great stand-by, together with prescribed quantities of port wine or whiskey; these agents having no more special influence in the treatment of insanity than in other cases of debility (unless they act specifically on the nerve cell), and being so well known and uneerstood by the profession it would be superfluous for me to comment upon them, their employment being intended to assist in restoring the strength and vitality of the patient, which when accomplished, a corresponding change on the mental faculties usually takes place. As previously, I have made free use of the Hypophosphites, and I have reason to believe with good results. If phosphorus (as asserted by Pereira*) acts as a stimulant to the nervous, vascular and secreting organs—if it excites the mental faculties, raises the temperature of the skin, increases the frequency of the pulse, and promotes the secretions—who can be doubtful that its preparations are valuable in the treatment of the insane, especially in cases of melancholia, if not in other forms of mental derangement? I have been in the habit of giving from five to ten grain doses of hypophosphite of lime twice a day, and in many instances have been quite satisfied with its good effects. I have not noticed any bad results even when administered for long continued periods.

* Third American Edition Wood's Pereira, vol. 1, p. 257.

Before concluding I would ask you to press upon the Government once more the absolute necessity of a mortuary, with suitable appliances for making *post mortem* examinations. Having commenced the practice and study of insanity, to which I desire to devote myself, if without proper facilities for increasing knowledge, my choice will be to the detriment of my proficiency in other branches of my profession. You will thus readily understand why I bring this matter so urgently before you. Ordinary reflection will show how impossible it is to carry on our studies without the necessary means of noticing the changes which have taken place in the organized structures of the human frame, and being able to compare those changes with the history of the patient. Errors which are likely to occur in diagnosis will be demonstrated, while doubts as to cause of death can be made certainties. Valuable opportunities, which only can be obtained in an institution of this kind, for studying the pathology of disease, whereby alone a true and rational line of treatment can be determined, are lost. But setting aside these considerations, and all hopes of making *post mortem* examinations, which I should be very sorry to do, where is a body to be placed while waiting for burial? At present a bath or dressing room in the very corridors in which the patients spend their time is the only place where it can be put. The influence such a state of things must have on the already too despondent inmates of the ward, cannot be other than to retard their recovery. Nor is this the only objection; there is another which is equally serious, viz., the effluvia given off from decomposing animal matter, which of necessity vitiates the air in the already ill-ventilated wards. On more than one occasion I have had to attend cases of sickness which I could attribute to none other than this cause. Should cholera, small-pox, or other disease of a probably contagious nature visit this institution, and its victims remain, as would have to be the case, in such close proximity to the inmates of the Asylum, there is no knowing what the result would be, or where it would end. A mortuary such as you described in your report last year would answer every purpose, and could be completed at a comparatively small cost.

Your obedient servant,

STEPHEN LETT,
Assist. Physician.

I earnestly trust that Dr. Lett's remarks on the want of a good mortuary in a proper situation will meet your favourable attention. Nothing can be more just than his observations, nor more alarming than the probabilities of evil he has so well put, when the fearful state of the drainage and ventilation is considered jointly with the remarks he has made on this subject.

FORMS OF ADMISSION.

I must call your attention to the insufficiency of the forms of application and admission. They do not insure the truth of the statement made by those whose duty it is to fill them. Applicants make false statements on the duration of the disease, frequently asserting that the patient has been afflicted only for months, when years would be the truth; suppressing their knowledge of former attacks, and representing the patient as suicidal or dangerous when they are harmless. The object of these misrepresentations is no doubt to obtain admission. So long as it was the impression of the public that dangerous and suicidal patients were first chosen for admission, all papers stated that the applicant was possessed of those qualities. When it became known that admission was generally awarded to the most curable, then the period of their affliction diminished from years to months. The remedy for these false statements will be sufficient Asylum accommodation to admit every applicant. But much might be done by inflicting a penalty for misrepresentation. It would be unjust to send a patient away from any chance of cure or improvement because another person made wrong statements, but a penalty in the shape of fine might answer. Another remedy will be found in the English method of separate certificates from doctors, with facts stated known to themselves. Under our present system my conviction is, that no paper is to be relied on for any facts. Out of the admissions sent here for four years past 77 are in those papers said to be suicidal; a very few (eleven) known to us having attempted suicide before admission. Since I have been connected with Malden Asylum and this, there has not been one suicide, or attempt at suicide, in either Asylum. I do not relate these facts for any other purpose than to show the

exaggerated nature of the statements in the application papers, for there is nothing in the condition and management of this Asylum to exempt us from the misfortunes of other Asylums. Therefore, the absence of suicide is due to the misstatements of its prevalence in the patients admitted, made in the papers sent to us. Statistics are mere rubbish when founded on papers such as we have sent to us. I think that the statements made in warrant cases sent from gaols are not one bit more to be relied on. The object is to get rid of the patient from the gaol, and to do so as quickly as possible they are sometimes said to be so violent and unmanageable that the Under-Secretary's letter is asked for to override the necessity for a warrant, and obtain immediate admission, rather than wait for the due course of law. Much improvement might be made in these papers to remedy their present defects. Whether the objections to sending patients into Asylums by warrants are greater than the advantages or not, I am sure that the objections to taking them out by warrants are very strong. They cannot be discharged except two medical men state that they have recovered. They are thus precluded from the advantages of being sent out on trial before perfect recovery, and this is, in many cases, a very serious disadvantage, for many cases get worse rather than better when too long detained in Asylums. They are detained for some time after cure is complete, because the physicians wish to be sure of that fact, before committing themselves to a statement which might be contradicted by a speedy relapse. In these cases the patients suffer some injury both from the mere detention in the Asylum and from the want of home and free influences.

I had the honour of addressing to you a letter to ask for information as to the mode of recovering warranted patients who have escaped from the Asylum. What powers has the Superintendent to recapture such patients or to require the assistance of magistrates? In the case I named the magistrate stated he had no power, I am not a magistrate and have no power out of the Asylum, and if I were a magistrate, to be efficient I must be one for the Province, not for the County only. But I have no desire to be one. I ought to be able to demand the help of all magistrates in every County. To that letter I received no reply, therefore, I have taken no steps to recover the patient, and should not know the legal course or the extent of my power in any future escape.

Paying Patients.

Patients who are required to pay for their maintenance or any portion of it, are not numerous in this Asylum. In its construction no provision was made for this class of patients. There are no separate rooms for a high class of inmates, and where the bedrooms are chiefly dormitories, the friends of patients able to pay do not desire to place their relations. Our number of single rooms is not greater than the varied forms of insanity demand for proper treatment, and they cannot be applied to the use of those who think themselves entitled to separate accommodation because they pay for it. It is right that those who are able to pay should do so, but it would be far better that they should be sent to an institution where the paying patients are separate from the paupers. They and their relatives would then see that they had something different from the non-paying in their accommodation, and in all their surroundings, and the relations of one class to the other, and to the asylum authorities would be improved. Bitterness would be avoided. which both paying and non-paying patients now express. But this is not the greatest evil. Patients are detained at their homes until they are past the curable stage of the disorder, for their friends say, "Oh, if I have to pay I will try them at home a little longer; and if they do not get better I can but bring them at last." "At last" means when the disease has become chronic and incurable Thus injury is done to the patients who ought to be sent at once to an Asylum, by the ignorant fear of expense on the part of relatives, which would be avoided if one asylum was known to be altogether free. If patients whose relatives are able to pay, or who have property themselves, get into the Asylum, they could be transferred to the other Institution, and payment demanded and enforced. But, in that case they would have received the benefits of treatment, and would be rescued from the class of chronic incurables, which adds so much to the permanent cost for the care of insane, now incurred by this Province. I believe that this cause has a deterring operation on the cure of insanity to a much greater extent than you seem to suspect, and I think after a few years the cost to the Province of those who are kept back from treatment by this cause, will far exceed the

profits you now obtain from paying patients admitted into this Asylum. Statistics on this head are very difficult to be obtained. for few like to admit that they can afford to pay and will not pay for the cure of their insane relatives. But the motives for this refusal to bring them at once to the Asylum are very apparent at the time they delay to do so. I have long been of the opinion that the mixture *in the same wards* of paying and non-paying patients is most unadvisable, and every year's experience confirms my opinion.

Amusements, &c.

The liberal grant made last Session for amusements enabled us to increase our library to nearly 800 volumes. We have provided books for patients and for attendants, of a light and also of an instructive character, food for all classes of minds. We have bought a billiard table complete with everything necessary for all the varieties of the game. A skittle alley has been built. Croquet and bowling-green sodded, and will be fit for use next season. Toys for the idiot asylum and other indoor amusements are procured. Dances once a week for all the patients who like to come to them, carried on till ten p.m., and once a month till 12 p.m. with coffee and supper. In the afternoon, before tea, some of the feeblest who cannot sit up late enjoy an hour's dancing. We were obliged to some friends who kindly volunteered a concert for us last winter, and readings of a very amusing description. A public reader also gave much pleasure to many of the inmates on one evening. Dissolving views, stereoscopic scenes complete the catalogue of recreations. I have to return thanks to a very few proprietors of newspapers for the free gift of their journals. The *Ingersoll Chronicle*, the *Woodstock Review*, the *Windsor Record* and the *Welland* are the only free papers sent to us from any of the counties whose insane are entitled to admission to this Asylum. The weekly issues of the *London Advertizer* and the *Herald*, but not the *Free Press*, are sent free. I see that some of the Counties attached to this Asylum send free papers to Toronto. Without desiring to deprive Dr. Workman, I suggest that we have the first claim to the generosity of the editors, and any obligations will be freely acknowledged when we receive contributed newspapers from any place.

Repairs and Condition of the Building and Grounds.

I am not aware of the amount of repair you intend to have done during next year within the building. The whole of it will require painting with good material, which will be cheaper, in time, than the mere whiting mixed with some inferior oil, with which it was originally daubed. The so-called hard facing on the plastered walls, not at first more than a sixteenth of an inch in thickness, has washed off the refractory bed-rooms and the walls of the corridors where dirty patients are injuring them, so as to require daily cleansing. There are materials known to architects which can be used for such walls, and will stand washing. If no plaster material can be had, it would be best to paint them. All these washed walls now show a dirty earthen-looking face on the plaster, and nothing can make them appear clean. I hope some remedy will be found. It will cost a considerable sum to complete these repairs.

We have plastered the walls where the steam pipes run, and altered the distribution of the steam supply pipes, so that the different flats and the centre building can be heated separately, or together as may be convenient. Much might still be done to economise steam in the redistribution of the supply and return pipes. The boilers have not had steam drums put on them, so that the steam space has not been increased in them, and they are still in danger of being emptied of the water as well as steam when much warmth is wanted, for the steam space being deficient, the boiling water is driven into the pipes, together with the steam. This evil ought to be remedied, for if we had not a most careful engineer, the boilers would have blown up long since.

I must also recall your attention to the windows and shutters. I need not restate the evils they cause in their present condition. There are still no means of subduing fire outside. No hydrants where water could be had for the fire engine. The small gas engine can be brought out of the house, but it would be very desirable to have the larger fire engine provided with a house, heated to keep its valves unfrozen in the winter, and some hydrants, where water could be had for the use of the engine. Also hose which has not

yet arrived. Nearly all we possess now is worn out. I think it would be best, and also most economical in the end, if the Waterous System of hydrants in proper situations round the buildings, with large two-inch pipes connecting with our pumps on both sides, could be applied under Mr. Waterous' directions to this Asylum. The example of Newburgh Asylum, Ohio, just burned, ought to be a warning to us, that a good supply of water without sufficient means of distributing it over the building will never put a fire out. All the engines that went from Cleveland were of no avail, and the consequence was serious loss of life, as well as of a building, which will require $300,000 to restore it. If such a calamity does not justify us in the expenditure of 4 or 5000 dollars for efficient protection from fire, I know of no example likely to be of any use to us. I have called your attention to our unprotected state in case of fire, page 37 of my last report, and in letters since. The many thunder-storms of the last month have passed over us without more damage than splitting a tree or two, and a couple of fence posts. The only buildings struck in London were provided with conductors, which, without constant attention, are apt to become evils instead of benefits.

Evils of the Drainage.

The state of the drainage and ventilation of the Asylum compelled me to draw your attention to the probabilities of disaster to the inmates, should the plague of Cholera now raging in parts of Europe cross the Altantic, various warnings in the shape of isolated cases in New-York and elsewhere justified me in taking this precaution, and the prevalence of Diarrhœa of a severe character among the patients and servants in the Asylum indicates the mischief that will be upon us, if steps are not taken to rectify speedily the evils we have to complain of. On this date, October 5th, the drains are being relaid in the same line with a little more fall, and much better workmanship but which will bring the tiles within 18 inches of the surface, and therefore more liable to be frozen. The pipes are 9 inches instead of 6 and will take a little longer in filling. This is good work as a temporary makeshift. They ought to be solid brick, oval, for wherever those laid by the contractors are examined, they are found broken, and these will be the same in a short time, more especially as they are nearer the surface than ever. It seems really strange that the engineers employed here have only one way of doing things. Like as Panurge says "men born in a barrel have only one way of seeing the world: that is through the bunghole." The extreme dryness of the Summer caused a deficient supply of water, especially in the West well, which failed us so far as to give us only one hour's pumping each day. I endeavoured to remedy this by sinking a well near the stable and pigstye, and running a supply drain into it from the sandhill at the back of the farm buildings. Sufficient water was found to keep the well supplied and by so much the main wells were relieved. Supposing that there was much water in the sand, I obtained your permission to attempt the supply of the West well from it. I had drains dug into it in three places, and led them into the well made by Mr. Cousins, before the Asylum was completed, and thence to the West well. Before these drains were made not a drop of water went into Mr. Cousins' well. They have been completed more than six weeks, and have continued to furnish from 8,000 to 12,000 gallons in the twenty four hours. The supply is greatest after a rain of some duration, but I think we shall have a constant supply from this source. The cost was about $114·00. It would be desirable to make a drain into the East well carrying it across our land, and tapping the springs on the fifty acres clearing on the north side of the farm and also tapping the very wet land on Mr. Trebilcock's farm. This work would yield a very large supply of water. Towards the expense of it, as Mr. Trebilcock would be greatly benefited, I have no doubt he would contribute. The cost would not exceed $400·00. All the water that can be obtained will be wanted when the buildings for patients which are contemplated shall be completely occupied, and therefore this drainage may be considered a work of necessity. The land will be improved by the drains which will perform a double duty and yield a double benefit.

Increase of Accommodation.

The rapidity with which this Asylum is filling, originally intended to contain 500 but capable of holding, with some inconvenience, 540, will soon compel the Province to provide more room. We have had 500 inmates exclusive of the Idiot Asylum.

and in a very short period we must refuse all applications except as vacancies occur. I am glad to find that you are prepared to recommend the erection of cottages for the chronic patients male and female, who are able to behave themselves with propriety. The more consideration given to the cottage system the more it will commend itself to your judgment. It has been strongly advocated by a most able Physician Dr. Jarvis, whose pamphlet was presented to all the members of the Association at the Toronto Meeting. In the last report of the Connecticut State Asylum by Dr. Shew, whose sound and experienced judgment is recognized by all who have the pleasure of his acquaintance, the following words are used : "Sufficient time has elapsed to convince me that the 'Cottage System' "can be made to play an important part in connection, with a regularly 'organized Hospital.' "There is a certain air of social comfort more like ordinary home-life pervading these cottages "than can be found in the wards of an hospital." The Superintendent would have to exercise careful judgment in electing the inmates for the cottages. He would have to consider not only their peculiar condition and fitness to be in buildings, where less supervision will be required, but also the temper and disposition of each member of the little household, to prevent uncongenial dispositions from being associated together. Those who are friendly with each other, and can contribute to each other's comfort, must be placed together. The whole success of the scheme depends on the selection, if that is bad, the scheme is naught. Therefore the immediate consideration is, are there sufficient of both sexes in the Asylum to fill eight cottages? Can forty-eight of each sex be selected. I think there is no doubt of it. Twenty-four were in the farm house and the other cottage for six months without any evil occurring, and with great addition to their own comforts, and at that time, when our numbers were few compared with the numbers we now have, I could have found as many more men equally fit for cottage life. I trust the cottages will be built next spring and the system in operation before the succeeding winter. I laid a sketch of the designs before you which I hope you will find satisfactory.

It would simplify the question of providing accommodation for the future increase of the insane if local houses, whether styled, Refuges or Houses of Industry were established in each County or union of Counties. It must be well known to you that there are many feeble, destitute persons utterly unprovided for. The towns and Counties try to get rid of them by sending them to gaol or to Asylums. I have been obliged many times to point out to the different authorities that the papers sent for application of admission contain descriptions of either feeble paralytics or harmless imbeciles, become so from disease or evil habits who are not fit for Asylums but very proper objects for Houses of Refuge. There is in this Asylum a few people of this class, who should be out of it in some place more suited for them. I have sent out of the Asylum people of this description. They have no homes or none where they can be cared for, and they get committed to gaol or brought before the magistrates, and renewed application is made to the Asylum for their readmission. They suffer from neglect when it is refused, and the Superintendent is esteemed a hard and unsympathizing man because he regards it as his duty to keep them out of a house provided for the insane, not for the destitute. An Act to compel Counties to erect buildings and provide for them is on the Statute Book, but it is optional with the county councils to do the work or not. My experience tells me that when men have the option of refusing to tax themselves, they are not slow to avail themselves of it, and that nothing short of the compulsion necessary to make Counties act, will accomplish the relief of the Asylums. It is certain that much relief would be given Asylums, were proper Refuges provided by Counties. But a very strict supervision would be necessary. There are a few Refuges in the Province and the patients sent here from them, as insane, have been in a very filthy condition. There are very few gaols where the insane are kept clean. Some sent here have been amazingly dirty, and full of vermin. I have made it a rule to report to you every instance of vermin-covered patients sent from gaols.

I have to acknowledge my obligations to all the officers, and attendants, and general servants attached to this house. Without their willing and careful attention, no work could go on satisfactorily; and the minutes you have made regarding the condition of the house during your several inspections, as well as the report of the Grand Juries, show that its condition has given you satisfaction. I am especially indebted to my friend, Dr. Lett, for his most earnest and enduring attention to the inner work of the Asylum, and his kindness to every one. He has continued his observations on the effect of medicine, and is making other observations on the connection of the quantities of Ozone with epidemic disease in the neighbour-

hood. A more able and indefatigable officer no Asylum can possess. If I do not mention others by name, it is not because I am insensible to their merits, for I have only praise to bestow on all. I have to represent that the general rise in all prices has included labour, and it is by no means so easy to obtain attendants, of either sex, of a good quality as it was two years since. Girls get as much in general service as we give, and, therefore, we have no inducements for them to accept situations amongst rough patients.

In Mr. Tully's report to the Commissioner of Works, last year, he thought proper to comment in a most incorrect manner upon observations of mine concerning the condition of this house. I replied in a report to you (not published, like Mr. Tully's), on the 12th of April last, in which I answered in detail, every assertion he made, and proved the correctness of my remarks. I might appeal, with confidence, to the architects sent here by the Commissioner to examine and report on the state of the workmanship and condition of the house; but, as their report is not published, I shall leave it to time, when it will become known to justify all I have said, and convict Mr. Tully of inaccuracy. It is sufficient now to state that the drainage is still unremedied, the ventilation unimproved, the woodwork as bad as can be, and the plaster falling everywhere. The flooring of kitchen and laundry speaks for itself. The windows are immovable without a carpenter constantly at work; the shutters are worth less; and the pumps are nearly always out of repair. Every one of these statements is, at this moment, open to observation and any man's intelligence can confirm, by a very slight observation, the truth of every word I have written. I think this is a sufficient reply to Mr. Tully's printed remarks and comments on me. If any future remarks are published, so unfounded, reflecting on my veracity, I shall feel it my duty to appeal to the Government for a board of inquiry to examine into the facts.

The kitchen requires a cooking range, as we cannot roast sufficient meat or bake pies and puddings for 540 inmates in our steam range. The sameness of the daily food is a source of just complaint. I have to request you to provide a cooking range next year, instead of our stove; after the original cost, the fuel will be about the same. The bakery requires considerable addition. Dr. Lett appeals most justly to you for an efficient mortuary.

Farms and Grounds.

From the end of May until September, the rain-fall on this farm was under two inches, and the weather intensely hot and dry all the time. The result to our potato crop was, that there was no growth, and where there should have been 1800 bushels of "Early Rose" of good size, there yielded only 700 bushels of small potatoes Out of the remaining twelve acres of late potatoes there will be only half a crop, for the "Peach Blows" were only beginning to grow in September, after the rains, and cannot have time to attain any size The same drought destroyed our hay crop, and stunted the straw of the oats. The only good crop we have is the barley—measured 40 bushels to the acre—which is, however, small and light in the grain. Half a crop of mangolds will be gathered. Swedish turnips, more tops than roots; carrots will be numerous but small; parsnips the same. Out of 12,000 cabbages and cauliflowers, there may be left after drought and grubs, 1200. The Kohl Rabi may be called a failure, they are so small. On the whole, I have not thought it possible to buy steers with any hope of having sufficient roots to fatten them, and have, in preference, added to our cows, as we want the milk, and can, by degrees kill the barren. Thus, a season which commenced with a promise of abundance, and which could not on any farm appear more hopeful, has ended in great disappointment, from causes beyond our control. The crop, not being gathered, cannot be given in bushels.

Eighty per cent. of the trees planted last autumn have died from want of water. All the birch, nearly all the maple, all the standard apples, and all the evergreens died in the course of the summer; and we were compelled to stand by and see them perish, for the same drought that destroyed them, lessened our Asylum water supply to such an extent that none could be spared to save the trees. We sodded about an acre for croquet and bowls, but the sod has since it was laid been too dry to be got into playing order. The cricket field has also been sodded. A bowling alley for ten pins has also been built at a very moderate cost. A billiard table has been put into the amusement room. Our flower garden has displayed its attractions very satisfactorily for the time and expense we have been able to give to it. Next year it will be better worth seeing, as the little additional glass we are putting up will give us

winter accommodation for bedding plants. We shall require a Grant for replacing the lost trees and continuing the drainage, which the many demands on our ornamentation fund prevented our completing this year.

Asylum for Idiots.

Since my last report an institution, termed "The Asylum for Idiots," has been opened in connection with the General Asylum, on the grounds in the rear in that building. The Idiot Asylum is not intended for the training of imbecile children, and its name conveys an erroneous idea to the general public and medical profession, and has caused some applications to be sent to me for the admission of teachable juvenile idiots who cannot be trained in this institution. The Asylum is intended to contain only those idiots who have long been in the gaols of the Province of Ontario, or who have been maintained by Townships, or retained at the homes of relatives, without any special treatment, and too often subjected to most careless and injudicious management, both at their homes and in the gaols. No doubt such an institution was urgently needed. The gaols required to be relieved from the presence of such inmates, and the inmates required better and cleanlier care than they received in gaols. Also, those who never were in gaols, but were in the care of their own relatives, assisted or unassisted by the money of the Townships, equally required removal from filth and neglect, and bad or ignorant treatment; therefore, the erection of a building for the reception of these long standing idiots had become a necessity, and its enlargement to a capacity necessary for all the imbeciles in the Province will be one of the most humane works of kindness and charity the Province has undertaken.

There are 17 males and 11 females in this Asylum; two are the offspring of intemperate parents; two of moderate drinkers, so-called; and the rest unknown as to their parents' habits. All (with one exception), male and female, who have yet been received in this Asylum were admitted in a condition of dirt and vermin, disgraceful alike to the gaols and the relations with whom they resided, and their condition and happiness now, compared with what it was previously, shew the benefit of this institution. Some came with reputations for violence and dirty habits, and (as stated) a necessity for restraint; but cleanliness, and kindness, and good diet have already rendered restraint needless, and have improved habits that seemed to be confirmed. Among the number admitted are some children capable of much improvement under a proper system of management. The means of producing this improvement are not existing in this Asylum, but are urgently required. Many sent from gaols are not properly idiots, but they are cases of dementia, or have lost their intellects from some disease (not recorded), after a comparatively late period of life. They have been sensible, and possessed of their faculties for some years, and have lost them. They are, therefore, not idiots; but it was thought necessary to remove them from gaols, and place them in an institution, rather incorrectly called, "Idiot Asylum." The principle that governed the authorities is, no doubt, a right one. The term only is misleading for the people of the Province may suppose that they have an Idiot Asylum already, and may be reluctant to sanction the measures required to build one, so much needed. An institution for the reception of grown-up imbeciles, is only a kind of workhouse for their reception and detention during their existence, but it has no effect in improving and amending their condition, or increasing their usefulness during, probably, a long life; nor does it help to diminish the cost to the Province of the maintenance of this class of unfortunates. An Asylum for Idiots, to train them and educate them, to teach them trades and handicrafts, and enable them to do something towards their own maintenance, as well as to elevate them in the scale of humanity, is absolutely essential in order to put this country on a level with others in regard to its charitable institutions. Much ignorance seems to prevail as to the nature of idiotic children and their capacity for improvement, and I shall devote a few sentences to some remarks on this point, in order to advance, as far as I am able, the desire to provide for true idiots.

Esquirol's definition of idiocy is "Un état constitutionnel dans lequel les fonctions intellectuelles ne se sont jamais developpées."

Translation.—A constitutional condition in which the intellectual functions are never developed.

In this definition he does not say that the intellect cannot be developed, but that it is not, and this and all other definitions appear most singularly to confine themselves to the psychologi-

cal side of the question. No allusion is ever made to the absence of muscular development, or to any other organic deficiencies. Want of development of the intellectual functions, indicated by the diminished brain, is generally apparent in the configuration of the head of the idiot. But the configuration that indicates cerebral deficiencies, also indicates bodily deformity; limbs of unequal power and unequal development, want of motion, or the power of regulating motion; inability to move the tongue to form speech; want of power to control the sphincters. Cerebral deficiencies in some of its organs give rise both to mental and corporeal phenomena of idiocy. Metaphysical discussions are impractical and useless in active life. We can held no relations to the mind except through the body. When that is dead we have no more intimacy with the mind that belonged to it. It is of no use, for practical purposes, to discuss how their mutual relations were maintained. If we want to improve the mind we can only do it by acting on the body through those organs that convey impressions to the brain. Therefore, for all practical purposes, every man who wishes to be useful to idiots must be a materialist, and he must leave to mere "Theorists," the discussion of the question of the manner of the relations of one to the other, or of the nature of mind. He has no concern with this discussion. It is sufficient for him that the Creator has given him his work to do through material organs. Let any one enter this or any other Asylum for idiots, and observe the want of physical organization in those who cannot walk or talk; or feed themselves, or dress themselves or who possess no control over the ordinary functions of the body, who are stunted in stature, who have limbs unequally developed, heads far below ordinary capacity. Let such an one, I say, reflect and assert, if he can that there is not bodily malady as well as consequent mental deficiencies. I lay stress on this because I conceive that it is by training the body we are to overcome the deficiencies of the body, and improve the deficiencies of the mind by training the cerebrum. If the evil were purely mental unconnected with matter, what could man do for its amendment? Who can minister to a mind diseased, if neither brain or body have connection with mind? To appreciate properly the system of training necessary for idiotic children, it is absolutely essential to form a clear idea of the nature of idiocy, and to estimate the distance which intervenes between their understanding and ordinary understanding, common to the majority of mankind. This study will enlighten us on the imperfections of our nature, and the diversity of our organizations, and the means necessary to strengthen its power to combat vices or correct faults. Nothing appeals more vividly to the mind than that which appears through the eyes. Enter an Asylum and see one poor creature trembling with rage, vociferating, or in tears; another crouched down in silence, motionless as an antomaton; one whom you address runs away laughing, another offers you salutations or respects in profusion; one gives a half intelligent answer to questions, another has a tongue that seems too big for his mouth, and speech is confused and inarticulate, some are blind; epliptic; dumb; have no regular movements; hardly sufficient to serve for their own wants and appetites. Enter the Asylum when the art of training these unfortunates has been long in operation and see those silent, helpless, and those screeching idiots, after skill has been devoted to their care, and what a difference. All are cleanly, most are occupied. Those with most limited faculties are taught order even if they are incapable of usefulness. Eyes are trained to see, ears to hearken. If a child, with unimpaired faculties, can be taught to recognize with its ears the different sounds belonging to quick and slow vibrations, so as to determine the fitting musical note, so can the impaired intellect be taught to discriminate tones, where, if untaught, all is unrecognizable. It is by recognizing the dependence of mental and moral qualities on physical organization, that idiots are successfully trained, and by exercising bodily deficiencies strength is gained. The habit of use gives power to the organ, the habit of use whether directed to the arm or to the leg, gives power to the limbs; so the use of an intellectual quality strengthens the brain and confirms its power, and no teaching that does not recognize the dependence of mind on brain, the fact that brains are increased and strengthened by faculties being called into judicious action, will succeed in improving idiots. But this problem being granted, does any one conceive the amount of courage required to attempt its solution. What patience! what mildness! what firmness! what kindness! what severity! and what perseverance! are essential to encourage the good will of some, to conquer the bad dispositions of others, to stimulate sluggishness, to subdue arrogance, and pride. What authority is requisite to command them, to bend them to discipline! What sagacity and resources of mind and invention, to open understandings so obscure, to cause light to enter on their darkened impressions, ideas and recollections, and to form for them,

or enable them to form ulterior acts of mind! Sufficiently imposing is the task to dismay men from encountering such complicated difficulties. But these difficulties are encountered and surmounted. Gymnasia give strength and co-ordinate action to muscles, and add to bodily powers. Senses are better exercised; exactness and precision are given to their motions. Actions are trained to subordination to mind. A knowledge of letters is given, so that they acquire power to read and write and draw, and use the first principles of arithmetic. They are familiarised with the different qualities of bodies, and thus taught the rudiments of geometry, and to reconcile abstract ideas of figures, space, density, colour and weight, with facts; from thence they learn ideas of order, obedience, and duty, which are the most elevated qualities of our organization. Health and robustness of mind and body are the necessary consequences of this training, and they thus become diverted from secret and fatal habits; for the more they are given to healthy work, the more they are withdrawn from vicious inclinations. These are the objects and advantages of the institution we require in the Province, and which have been obtained effectually elsewhere. All these things are well known to the medical profession and I reiterate them in the fervent hope that by so doing I shall cause them to become better known to the public of Ontario, and help to establish, as early as possible, a training asylum so much required. Out of the first twenty-five patients admitted to this Asylum for idiots six were children, at or under the age of puberty, and all these are capable of great improvement by the system I have alluded to. There are no means to carry into operation this training system here, nor have any of us the requisite qualities to fulfil such duties, if the means were at hand. Special training and peculiar qualities are required in the man who has to conduct an Asylum for idiots, and it is utterly impossible to do justice in an institution like this, to those who are capable of much improvement, like the six juveniles now in it. If every infant had been collected in a training institution years since, there would now be no necessity for the cost of providing for adult imbeciles in this Asylum, for they would have been placed where they could have been taught some useful arts, and the Province would have avoided the cost of building both a training asylum and a house of detention It is vain to look back on our sins of omission. That which we have neglected hitherto can only be remedied by prompt action now, and no time ought to be lost if future expense is to be avoided. The Ohio Board of Charities, 1869, states "That a number of feeble-minded children, whose education would be wholly impracticable elsewhere, are educated to an extent which greatly promotes their comfort, and may, in many instances, secure their future welfare is a fact beyond cavil." The New York State Board says, "The success of this institution has become assured, and it elevates its inmates in the scale of moral and intellectual being, rendering their presence in society endurable." The Illinois says, "The results are most satisfactory." In Great Britain such institutions have long been established and have been devoted far more than in the States to instruction in industrial occupations, and most successfully.

So far I have presumed to call your attention to a great want which our institution cannot supply.

There are many defects in the structure of this building. No provision was made originally for hot water and the substitution of a boiler inside the building creates a nuisance. There being no chimney to carry off the smoke, a twelve-inch iron pipe has been carried into the nine-inch kitchen flue. The consequence of this stroke of genius is that the house is filled with smoke every time the boiler fire is lighted, and it will not be remedied until a chimney is built. You have a smoke pipe of 12 inches diameter and one 7 inches to pass through a pipe of 9 inches. In other words, you have 292·1688 cubic inches of smoke required to go through a pipe of the capacity of only 187·2348 cubic inches, assuming a similar length of pipe (2 inches) in relation to the diameter in each calculation. Something like putting a quart of beer into a pint pot. As the pipe to which the hydrants in the building are attached do not connect with the tank, but only with the pump supply-pipe, the consequence is that the hydrants can only be supplied with water when the Asylum pumps are going, and then only when the four tanks in the main building are full. If a fire should occur in the night, or at other time when our tanks are not full, not a pint of water will be had in the Idiot Asylum hydrants. I have so often called your attention to this skilful engineering that I am in despair of a remedy, and only now report it in order that no responsibility may attach to me in case of mischief. The evil is more deplorable as the remedy is so easy. A pipe from the main tank to the idiot supply-pipe would give water to the Idiot Asylum so long as there

is any in the main tank. The Idiot Asylum is often half a day without water. It cannot be pumped direct without breaking something about the pumps, as the supply pipe is one inch and a half and the pump three inches diameter.

There are many other things I might call your attention to, but as I have written you many letters during the past year on deficiencies and wants, I need not here repeat them. I earnestly trust that the ensuing summer will not pass away before this Asylum reaches the perfection we all wish it to have.

I have the honour to be,
Your obedient servant,

HENRY LANDOR, M.D.,
Superintendent.

TABLE No. 1.

Showing the movements of Patients in the Asylum, from 30th Sept., 1 71, to 1st Oct., 1872.

	M.	F.	T.	M.	F.	T.	M.	F.	T.
Remaining Sept. 30th, 1871				207	250	457			
Admitted :—									
" on Lieut.-Governor's Warrant	28	18	46						
" Medical Certificates	34	35	69	62	53	115			
Whole No. under Treatment							269	303	572
Discharged Cured	20	17	37						
" Improved	2	5	7						
" Unimproved	1	0	1						
Total Discharged				23	22	45			
" Died				11	16	27			
" Eloped				3	1	4	37	39	76
Remaining Oct. 1st, 1872							232	264	496

TABLE No. 2.

Showing the Number of Applications received, and how disposed of, from 30th Sept., 1871, to 1st Oct., 1872.

	M.	F.	T.	Remarks.
No. Applications Received	70	70	140	No. applications received includes warranted cases, all of whom have been admitted.
" " Rejected	8	17	25	
" " Admitted	62	53	115	

TABLE No. 3.

Showing the Deaths in the Asylum, from 30th Sept. 1871, to 1st Oct. 1872, with the Ages, Causes, and Length of Asylum Residence.

Reg. No.	Sex.	Age.	Asylum Residence.			Date of Death.	Proximate Cause of Death.
			Y.	M.	D.		
267	Male	54	14	8	17	Oct. 1st, 1871	Scrofula.
52	Female	63	16	2	27	" 4th, "	Chronic Hepatitis.
487	Male	19	0	1	6	" 12th, "	Epilepsy.
154	Female	51	9	1	14	" 16th, "	Acute Diarrhœa.
379	Female	46	0	10	3	Nov. 24th, "	Phthisis.
273	Male	65	14	6	20	Dec. 9th, "	Senile Decay.
503	Male	40	0	2	1	" 22nd, "	General Paresis.
491	Female	26	0	3	15	" 28th, "	Cerebritis.
531	Female	34	0	1	5	Jan. 31st, "	Erysipelas.
39	Female	42	22	4	26	Feb. 28th, "	Apoplexy.
176	Female	42	5	5	7	" 28th, "	Marasmus.
191	Male	52	3	11	4	March 2nd "	Chronic Hepatitis.
275	Male	32	9	10	13	" 4th "	Scrofula.
439	Male	40	0	9	6	" 6th "	Phthisis.
384	Female	45	1	1	12	" 10th "	Marasmus.
522	Female	50	0	3	19	" 15th "	Chronic Meningitis.
346	Male	32	6	4	26	" 26th "	Phthisis.
109	Male	55	18	0	7	April 14th "	Disease of Heart.
123	Female	48	21	10	28	" 17th "	Chronic Meningitis.
387	Female	59	1	2	17	" 21st "	Capillary Bronchitis.
394	Male	31	1	2	26	May 10th "	Chronic Hepatitis.
510	Female	31	0	6	13	" 13th "	Scrofula.
544	Female	36	0	3	20	" 29th "	Epilepsy.
484	Female	?	0	8	30	" 30th "	Phthisis.
84	Female	61	19	3	12	June 30th "	Senile Decay.
199	Male	35	3	7	14	July 15th "	Chronic Meningitis.
353	Female	50	12	0	5	" 28th "	Phthisis.

TABLE No. 4.

Showing the Length of Asylum Residence, Age, and form of Mental Disorder of those Discharged from 30th Sept. 1871, to 1st Oct., 1872.

Reg. No.	Sex.	Age.	Asylum Residence.			Form of Mental Disorder.	Duration of Attack before Admission.	No. of Attacks.
			Y.	M.	D.			
455	Male	58	0	3	14	Mania	6 Weeks	1st.
486	Male	21	0	1	14	Imbecility	17 Years	
430	Male	50	0	5	14	Melancholia	5 Months	1st.
445	Male	24	0	4	17	Mania	2 Weeks	1st.
449	Female	24	0	4	29	Melancholia	5 Months	1st.
393	Male	35	0	10	8	Melancholia	8 Years	1st.
465	Male	23	0	5	21	Mania	10 Days	2nd.
488	Female	35	0	4	6	Melancholia	3 Months	1st.
466	Male	39	0	6	9	Mania	3 Weeks	1st.
499	Female	25	0	4	0	Mania	7 Weeks	1st.
443	Male	43	0	7	27	Mania	3 Years	2nd.
457	Female	17	0	7	8	Mania	6 Weeks	1st.
419	Female	24	0	9	30	Mania	10 Days	2nd.
424	Female	30	0	9	19	Mania	18 Months	1st.
418	Female	28	0	10	6	Melancholia	5 Months	2nd.
401	Male	27	1	1	3	Mania	2 Weeks	2nd.
395	Female	36	1	1	7	Mania	5 Weeks	1st.
461	Male	63	0	9	15	Melancholia	12 Months	?
489	Female	27	0	7	20	Mania	12 Days	1st.
474	Male	64	0	9	28	Mania	3 Months	3rd.
435	Male	34	0	11	11	Melancholia	4 Months	1st.
396	Female	28	1	2	12	Mania	5 Months	1st.

TABLE No. 4—*Continued.*

Reg. No.	Sex.	Age.	Asylum Residence.			Form of Mental Disorder.	Duration of Attack before Admission.	No. of Attacks.
			Y.	M.	D.			
501	Male	?	0	7	10	Mania	?	?
483	Female	?	0	8	23	Melancholia	2 Weeks	3rd.
468	Female	25	0	10	13	Mania	7 Weeks	1st.
202	Female	53	3	2	0	Mania	2 Years	1st.
529	Male	43	0	5	10	Mania	6 Weeks	1st.
532	Male	36	0	4	28	Mania	1 Week	1st.
558	Male	?	0	2	9	Mania	3 Months	1st.
551	Male	48	0	2	22	Melancholia	2 Months	2nd.
559	Female	23	0	2	15	Mania	6 Weeks	1st.
[illegible]	Male	34	0	8	14	Melancholia	4 Weeks	Several.
[illegible]	Male	45	0	2	15	Melancholia	5 Months	1st.
456	Male	64	0	11	15	Melancholia	1 Year	1st.
206	Female	27	2	11	18	Mania	?	3rd.
540	Female	18	0	4	29	Mania	7 Weeks	1st.
550	Male	36	0	4	21	Mania	5 Weeks	2nd.
482	Male	19	0	11	3	Mania	2 Weeks	2nd.
386	Female	?	1	7	17	Mania	?	?
534	Male	46	0	8	0	Mania	?	2nd.
546	Female	30	0	6	25	Mania	7 Weeks	1st.
556	Female	43	0	5	26	Mania	2 Weeks	1st.
582	Female	26	0	3	11	Melancholia	5 Weeks	1st.
426	Female	17	1	5	1	Mania	5 Days	1st.
565	Female	13	0	5	8	Hysteria	5 Weeks	1st.

TABLE No. 5.

Showing the Residence of those admitted from 30th Sept., 1871, to Oct. 1st, 1872.

No.	Counties.	By Warrant.			Medical Certificate.			Total.
		M.	F.	T.	M.	F.	T.	
1	Brant	4	1	5	2	1	3	8
2	Bruce	1	2	3	"	3	3	6
3	Elgin	1	"	1	4	5	9	10
4	Essex	3	1	4	1	2	3	7
5	Grey	"	2	2	"	"	"	2
6	Haldimand	"	"	"	"	3	3	3
7	Huron	"	1	1	6	"	6	7
8	Kent	1	"	1	"	6	6	7
9	Lambton	7	"	7	1	"	1	8
10	Middlesex	4	2	6	9	9	18	24
11	Norfolk	1	3	4	1	2	3	7
12	Ontario	"	1	1	"	"	0	1
13	Oxford	1	1	2	5	2	7	9
14	Perth	3	"	3	"	1	1	4
15	Peterboro'	"	1	1	"	"	"	1
16	Simcoe	1	"	1	"	"	"	1
17	Victoria	1	1	2	"	"	"	2
18	Waterloo	"	"	"	5	1	6	6
19	York	"	2	2	"	"	"	2
	Total	28	18	46	34	35	69	115

TABLE No. 6.

Showing the Employment of the Patients during the Year ending Oct. 1st, 1872.

Service.	No.
MALES.	
Farm	40
Garden	10
Grounds	5
Carpenter's Shop	3
Boiler Houses	4
Bakery	1
Butcher's Shop	3
Tinsmith's Shop	1
Sewing Room	1
Kitchen	2
Laundry	3
Dining Rooms	4
On the Wards	26
Total	103
FEMALES.	
Dining Rooms	4
Kitchen	2
Sewing Room	19
Laundry	10
On the Wards	118
Total	153

TABLE.

Showing the Civil Condition, Nationalities and Religion of those in the Asylum, October 1st, 1872.

CIVIL CONDITION.	No.
Married	213
Single	283
Total	496

NATIONALITIES.	
England	61
Ireland	179
Scotland	55
Canada	154
United States	14
Others	16
Unknown	17
Total	496

RELIGION.	
Church of England	123
Roman Catholic	132
Presbyterian	93
Methodist	71
Others	52
Unknown	25
Total	496

TABLE.

Showing the Residence of Patients in the Asylum on October 1st, 1872.

COUNTIES.	Male.	Female.	Total.
Brant	7	6	13
Bruce	2	10	12
Carleton	3	5	8
Elgin	14	17	31
Essex	11	10	21
Frontenac	4	6	10
Grey	1	7	8
Haldimand	3	8	11
Halton	1	4	5
Hastings	3	2	5
Huron	12	6	18
Kent	5	15	20
Lambton	12	10	22
Lanark	2	1	3
Leeds and Grenville		2	2
Lennox and Addington	2	1	3
Lincoln	2	5	7
Middlesex	40	36	76
Norfolk	6	11	17
Northumberland and Durham	8	6	14
Ontario	5	5	10
Oxford	12	13	25
Peel	3	2	5
Perth	4	11	15
Peterboro'		2	2
Prescott and Russell	1	1	2
Prince Edward	1		1
Simcoe	5	12	17
Stormont, Dundas and Glengarry	2	4	6
Victoria	3	4	7
Waterloo	7	4	11
Welland	4		4
Wellington	6	3	9
Wentworth	4	7	11
York	18	18	36
Province of Quebec	2		2
United States	1		1
Unknown	16	10	26
Total	232	264	496

TABLE.

Showing the Nationalities, Religion, and Counties from which admitted, of all in the Idiot Asylum, on 30th September, 1872.

NATIONALITIES.	No.	COUNTIES.	No.
England	2	Brant	2
Ireland	2	Carleton	3
Scotland	2	Elgin	1
Canada	17	Frontenac	2
Others	1	Hastings	2
Unknown	1	Huron	1
		Kent	2
Total	25	Lennox and Addington	1

TABLE.

Showing the Nationalities, Religion, and Counties from which admitted, of all in the Idiot Asylum, on 30th September, 1872.—*Continued.*

Religion.	No.	Counties.	No.
English Church	4	Lincoln	1
Roman Catholic	8	Middlesex	1
Presbyterian	5	Perth	2
Methodist	3	Simcoe	3
Others	2	Victoria	1
Unknown	3	Waterloo	1
		Wentworth	1
Total	25	York	1
		Total	25

On the 10th of October, when my report was sent, there were 28 inmates, but on the 30th September only the above 25.

H. L.

REPORT

OF THE

PRINCIPAL

OF THE

INSTITUTION FOR THE DEAF AND DUMB,

BELLEVILLE.

J. W. Langmuir, Esq.,
Inspector of Asylums, Prisons, &c.
Toronto.

Sir,—In conformity with the requirement of the Statute, I beg leave to submit my second annual report, showing the operations of the Ontario Institution for the Deaf and Dumb, during the year ending September 30th, 1872. From your frequent and thorough inspection, and from regular correspondence, I am aware that you are fully acquainted with the workings of the Institution in its several departments. I only propose to give a resumé of what has been done during the year, with such suggestions as to improvements, &c., as will place the Institution in a proper condition to carry out the design for which it was established.

During the year ending September 30th, 1872, the number of pupils in attendance was as follows:—

Males	97
Females	52
Total	149

They were supported as follows:—

By parents or friends	77
" the Government of Ontario, as orphans	13
" Municipalities.	
County of Brant	3
" Carleton	1
" Grey	3
" Hastings	5
" Huron	12
" Lambton	3
" Middlesex	1
" Norfolk	3
" Northumberland and Durham	11
" Ontario	1
" Peel	1
" Simcoe	1
	171

	County of	Welland	1
	"	Wellington	4
	"	York	3
Town of Belleville	"	Hastings	3
Village of Cayuga	"	Haldimand	1
Township of Tay	"	Simcoe	1
" Innisfil	"	"	1
	Total		149

The total number of pupils who have entered the Institution from its organization October 20th, 1870, to September 30th, 1872, is—

Males	99
Females	54
Total	153

All of these, with one exception, are from the Province of Ontario, and reside in the following Counties and Cities:—

Brant	7	Norfolk	5
Bruce	1	Northumberland	10
Carleton	2	Ontario	3
Durham	6	Ottawa	1
Elgin	3	Oxford	2
Essex	1	Peel	3
Frontenac	4	Perth	7
Grey	5	Peterborough	1
Huron	14	Prince Edward	1
Haldimand	2	Restigouche, New Brunswick	1
Hamilton	1	Russell	2
Hastings	8	Simcoe	6
Kent	2	Toronto	3
Lambton	7	Welland	3
Kingston	1	Wellington	6
Lanark	2	Wentworth	4
Leeds and Grenville	3	York	6
Lennox and Addington	2	Waterloo	1
Lincoln	1		
London	1	Total	153
Middlesex	15		

The following tables will show the religion, nationality and occupation of the parents of those included in the above statement:—

Religion.

Presbyterian	46	Congregational	1
Methodists	38	Evangelical	1
Church of England	33	Disciples of Christ	1
Baptists	11	Unknown	12
Roman Catholics	7		
Bible Christians	2	Total	153
Lutheran	1		

Nationality.

Scotland	24	Indian	1
Ireland	33	United States	4
Canada	42	Unknown	12
Germany	3		
England	34	Total	153
	172		

Occupation.

Farmers	76	Sail-maker	1
Trader	1	Merchants	3
Tailor	1	Brick-maker	1
Blacksmiths	3	Currier	1
Labourers	15	Boarding-house keeper	1
Coopers	2	Yeoman	1
Carpenter	6	School Teachers	2
Governor of Jail	1	Minister	1
Drayman	1	Clerk	1
Nurseryman	1	Butcher	1
Plasterer	1	Gardener	1
Tavern-keeper	1	Waggon-maker	1
Boot and Shoe Maker	1	Accountant	1
Iron Monger	1	Baker	1
Teamsters	2	Manufacturer	1
Fisherman	1	Merchant and Farmer	1
Miller	1	Unknown	15
Washerwoman	1		
Painters and Decorators	2	Total	153
Millwright	1		

From the foregoing tables it will be seen that one hundred and fifty-three deaf mutes have been connected with the Institution since its organization, less than two years ago. At the present time one hundred and thirty-two pupils are in attendance. Twenty-one have not returned to School for various reasons, but the principal reason assigned is the inability of the parents to pay the amount of $6.00 per month for board. From the statistical information published in the first Annual Report, we are convinced that there are at least one hundred and twenty-five (125) deaf mutes, besides those who have been entered, who should be sent to the Institution. These children are kept at home from various causes; some because their parents are not able to pay the sum charged for their maintenance, and do not feel willing to ask aid from the Municipality; others are not able to pay, and the Municipality will not give them the desired aid; and, I am sorry to say, that I have been informed of cases where the parents are able to educate their children, but are unwilling to be deprived of their labour while they are at School. Taking all these things into consideration, I think we should feel encouraged at the number who have entered the Institution up to this time.

In accordance with your instructions, I prepared and sent the following circular to the Clerks of all the Municipalities in the Province:—

"Ontario Institution for the Deaf and Dumb,
"Belleville, August 20th, 1872.

"Sir,—I beg leave to call your attention to the following communication from J. W. Langmuir, Esq., Inspector of Asylums, Prisons, &c., for the Province of Ontario:—

'Office of Inspector of Asylums, Prisons, &c.,
'Toronto, 15th August, 1872.

'Sir,—The Government having had under consideration the desirability of reducing the rate of board of all pupils sent by various municipalities to the Ontario Institution for the Deaf and Dumb, I have pleasure in informing you that, from the opening of the ensuing session, Municipal Corporations will only be charged One Dollar per week for the board of pupils whose parents or guardians are unable to pay for the same. This reduction in the rate of board is authorized by the Government for the purpose of enabling the Institution to accomplish to the fullest extent the object for which it was founded, viz., that every deaf mute of school age in the Province might be placed under instruction. It is most sincerely to be hoped that all municipalities having deaf mute children within their limits, will heartily co-

operate with the Government in endeavouring to bring about this most desired result, and that the greatest promptitude and liberality will be shown by them in seeking out and sending forward pupils at the opening of the next Session on the fourth of September, 1872.

'Respectfully yours,

'J. W. LANGMUIR,
Inspector.

'W. J. PALMER,
'*Principal.*'

"During the second session of the Institution, which closed June 26th, 1872, there were one hundred and twenty-four deaf mutes in attendance. Of this number fifty-five were supported by parents and friends, thirteen by the Government as orphans, and fifty-six by Municipalities.

"As near as we can ascertain, there are at least one hundred and fifty deaf mutes in the Province, of proper age, who have not entered the Institution. Of this number many are not sent forward, because their parents or friends are unable to pay for their support in the Institution, In some instances Municipal Councils have ordered ALL deaf mutes of the proper age to be sent to the Institution at the expense of the Municipality. I would respectfully ask you to place this matter before the Council at their next meeting for consideration. Permit me to express the hope that such steps may be taken as will enable every deaf mute in the Province of Ontario to enjoy the benefits of an education so generously provided by the Government. Any information as to the form of application, terms of admission, &c., will be cheerfully given on application to me by letter or otherwise.

"Very respectfully,

"W. J. PALMER,
Principal."

The responses received so far, making inquiries as to the terms of admission, &c, lead me to believe that quite a number of new pupils will be sent forward at the commencement of the new year.

With a view of awakening a greater interest in the minds of the people in behalf of our work, I have taken occasion to invite all organizations, composed of delegates from various parts of the Province, who have held their annual meetings in Belleville, to visit the Institution and witness our method of instruction. During the past year the invitations were accepted by the following Societies:—Grand Lodge of Good Templars of Canada; Young Men's Christian Association Convention; the British Templars' Grand Lodge; and Hastings' Teachers' Association. In addition to these, the Warden and Members of the Council for the County of Hastings visited the Institution, and witnessed an exhibition of the pupils. At the invitation of the Warden of the United Counties of Northumberland and Durham, I visited Cobourg, during the Session of the Council in June last, with some of the pupils from these Counties. They seemed greatly pleased with the progress made by the pupils, and promised that they would individually use their influence to have every deaf mute of a proper age within their jurisdiction sent to the Institution. It is my intention, during the ensuing year, to visit several important points in the Province with some of our pupils, and give the people an opportunity to see what we are doing for the benefit of the deaf and dumb.

When our people become fully acquainted with the advantages here offered to this unfortunate class, who have so long been denied the benefits of an education, I cannot believe that any Municipality in the Province will decline to accept the very liberal terms offered by the Government, but will give their hearty co-operation in this benevolent work, by ordering all deaf mutes of the proper age within their limits to be sent to the Institution.

In the Educational department we have accomplished as much as could be expected under all the unfavourable circumstances connected with the organization of a new institution. It is impossible to make as good a classification as could be made in older institutions. At the semi-annual examination in February last, we made as good a classification as possible, dividing the school into six classes, although it was necessary that some of the teachers should have two divisions. The classification was made after a careful and thorough examination of all the pupils, occupying five days; and I find that the gratifying progress made

during the remainder of the term, gave evidence that the time had been well spent. I have received many assurances from the parents and friends of our pupils of their satisfaction at the progress made so far; and it is to be hoped that when we can effect a better classification and organization, even more favourable results may be anticipated. We have now seven classes, and if we have as many new pupils as we expect, it will be necessary to organize another class.

At the commencement of the present year, I formed a class of thirteen semi-mutes and placed them under the instruction of Mr. Watson, one of our teachers, for two hours each day. Our aim has been to improve their articulation. And so far, while their general improvement has been quite gratifying, in several instances it has been so marked and decided as to elicit the greatest commendation from relatives and friends.

The instruction of deaf mutes through the medium of articulation is still eliciting considerable attention; and the results of experiments now being made in this direction in some of the older institutions, as well as several institutions devoted to this speciality, are looked for with great interest.

The system of Mr. Melville Bell, as introduced by his son, Mr. H. Graham Bell, has awakened a great interest among Instructors of the Deaf and Dumb. He claims that, by the aid of his method, "Visible Speech," articulation can be successfully taught to congenital deaf mutes. At the Conference of Principals of Deaf Mute Institutions, held in Flint, Mich., in August last, Mr. Bell read a paper which elicited considerable enquiry and discussion, at the close of which the following resolution was adopted:—

"*Resolved:* That the Conference has listened to the paper of Mr. A. Graham Bell, on 'Articulation among Deaf Mutes,' and to his elucidations by illustration on the board with great interest; that the system of visible speech impresses the members of the Conference as being philosophical, and that it promises great aid in the instruction to the deaf in articulation."

The system of Professor Bell has been introduced into the Boston Day School for Deaf Mutes; the Northampton Institution for Deaf and Dumb; the American Asylum for Deaf and and Dumb; National Deaf Mute College; and Illinois Institution for Deaf and Dumb, and in this way it will be fairly tested

We are not prepared to enter the field of experiment. That is properly the work of older Institutions, whose organization is complete. We shall continue the system of instruction almost universally used in American Institutions for the Deaf and Dumb, until it shall be clearly proved that there is a better system. In the meantime we shall watch carefully the improvements made in the management of Deaf Mute Institutions, and introduce such changes as shall be calculated to advance the interests of those committed to our care.

School is opened and closed with prayer, morning and afternoon, by one of the teachers, and on Sabbath a simple lecture on Scripture History is delivered by the Principal at 9½ a.m., and by the teacher in charge at 3 o'clock p.m.

The industrial training of our pupils has not been neglected during the past year. As we had no suitable shop buildings, the male pupils could not receive such instruction in mechanical pursuits as was desirable. Ten have worked regularly with Mr. Creber, our carpenter, and have kept up the repairs about the Institution premises, besides building a piggery and hennery combined, and such fences and enclosures as were needed. Others have worked on the farm and grounds, and it is my pleasing duty to call your attention to their willingness to execute any work assigned to them.

The completion of the new shop building will enable us at the commencement of the new year to instruct a larger number of pupils in mechanical pursuits. I would recommend that in addition to cabinet making and carpentering, we introduce the trades of shoe-making and tailoring. I would also suggest the employment of a blacksmith, as it is necessary to do a large amount of repairs during the year which might be saved, and besides it would be advantageous to several of our pupils to learn this branch of industry. It has been my aim to recommend the introduction of such trades as could be prosecuted with success and profit by the pupil after leaving school.

Out of school-hours the female pupils, under the Matron, have been engaged in the usual domestic pursuits; and they have also done the necessary sewing for the several departments of the Institution, which includes repairing the clothing of the male and female pupils. The two sewing machines we find of great service, and some of our girls have learned

to use them with much skill. During the ensuing year it is my intention to see that more attention is paid to ornamental work.

A class of sixteen, nine boys and seven girls, have been instructed in drawing by Mr. Ackerman during the past term. Some of their sketches have been very much admired. I will mention as a matter of commendation, that one of his pupils obtained the second premium for a pencil sketch exhibited in the Fine Arts Department at the Annual Exhibition of the West Hastings Agricultural Association.

While the pupils have come in with greater promptitude than usual at the commencement of the present term yet some are kept at home for trivial causes. This is prejudicial both to the interests of the pupil and of the class. I would recommend that after the close of the present term pupils be admitted only at the commencement and middle of the term; and that pupils who are absent will lose their place in their class. Such a regulation will, I think, insure greater regularity.

Our farm is in much better condition than it was at the time of my last report. A substantial fence has been placed along the Bay shore, which enables us to place that lot under cultivation. The Northern part of the farm has been divided by a good fence, and the rear lot affords excellent pasturage. A large number of loose stones have been either piled or removed, and an energetic warfare has been waged against that great enemy of our Canadian farmers, the thistle, with marked success.

A drain has been constructed through the field in rear of the barn, which has brought a large portion of land hitherto useless under cultivation. During the year we have procured from the town three hundred and seventy-six loads of manure, and about fifty loads from our own premises. The meadow embraces about fourteen acres, from which we secured thirteen tons of hay. Besides the garden, there were about sixteen acres under cultivation last year.

We raised on our farm three hundred bushels of grain, including oats, peas and corn; one thousand bushels potatoes; about ten tons corn fodder and other feed for cattle; one hundred and thirty bushels of mangold wurtzel; and our small orchard yielded forty-two bushels of apples. In addition to the regular farm work our team has done a large amount of extra hauling, such as loose stones from the farm, manure from town, &c. In our garden we have raised a great variety of vegetables, sufficient for our ordinary consumption, besides what is stored for winter use. The yield has been greater than could have been expected, owing to the dry season and the short time the land has been under thorough cultivation.

The following statement will show the amount of vegetables produced in the garden, which is quite creditable to the industry of our gardener, considering the adverse circumstances under which he laboured:—

92 Bushels Potatoes.
100½ " Beets.
63½ " Carrots.
129 Dozen "
39 Bunches "
35 Bushels Parsnips.
6 " Salsify.
2800 Heads Cabbage.
640 " Cauliflower.
6801 Cucumbers.
113 Melons.
42 Bushels Tomatoes.
320 Dozen Rhubarb.
600 Heads Celery.
11 Bushels Onions.
462 Dozen "
39 Bunches "
90 Bushels Turnips.
97 Quarts Peas.
10 Bushels "
135 Quarts Beans.
5 Bushels "
469 Dozen Sweet Corn.
38 Red Peppers.
108 Bundles Lettuce.
15 " Cress.
8 Mustard.
4 Summer Savery.
2 " Sage.
1 Bushel Parsley.
30 Purple Egg Plants.
80 Pumpkins.
35 Dozen Squash.
60 " Leeks.
200 " Asparagus.
5½ Bushels Spinach.
20 Dozen Swiss Chard.
325 " Radishes.

It will take some time before our farm can be brought into proper condition for profitable cultivation. It is a heavy clay soil, and will require abundance of manure and a

thorough system of under-draining. I will mention in this connection, that at the recent Exhibition of the West Hastings Agricultural Association several premiums were awarded to the products of our farm and garden.

While our front grounds are in better condition than they were last year, we find it very difficult to get the grass to grow. Many of the trees planted have died, although planted with great care. I am advised by persons familiar with the nature of the soil, that it will be necessary to introduce a complete system of drainage before we can get either trees or plants to flourish. I would recommend the construction of a drain or sewer running north and south through the eastern portion of our grounds, into which, as well as the main drain on the western side of the grounds, lateral drains could be run. In this manner a thorough system of drainage can be effected. A considerable number of the trees planted on the Trenton road in front of our grounds and along the road on the east side have died. This is perhaps owing to the extreme cold of last winter, combined with the drought and heat of the past summer. The fountain recently put up in front of the main building presents a handsome appearance.

We have enlarged our kitchen by an addition of 17 ft. by 21 ft., and put in a range 14 ft. long, with necessary fixtures and a broiler attached, 2 ft. 6 in. long. The range is of sufficient capacity to cook for two hundred and fifty persons. A convenient pantry has been fitted up between the dining-room and kitchen, with two large sinks lined with lead and supplied with hot and cold water.

The heating apparatus worked well during the past winter. The addition of another boiler and a large amount of pipes, as well as remodelling the entire system by Messrs. E. & J. Rogers, of London, remedied the difficulties experienced the previous winter.

A circulating boiler has been placed in the engine-room, and by this means a supply of hot water is furnished in the laundry, bath-rooms, pantry, &c. By this arrangement it is not necessary for us to use the steam boilers during the summer.

For the purpose of internal fire protection, two chemical fire-engines with 100 ft. of hose each, have been secured from Mr. W. C. Nunn, agent. Outside the building, at convenient points, five hydrants have been placed by which, with an ample supply of hose, a stream of water can be thrown on any portion of the building. Additional tanks should be placed in the building, as those we have will only contain a limited supply of water. I think it will be necessary to secure another pump at the engine-house, near the Bay, as the one now in use is not of sufficient power to furnish a supply of water in the event of a fire.

The buildings in progress for the shop, farmer's, and engineer's residences will be completed in November. The work has been well executed by Mr. John Forin, the contractor, under the supervision of Mr. A. Dalgleish, clerk of the works, who is certainly an efficient officer.

In my last report I recommended the erection of a building to be used as a gymnasium, I beg leave to renew this recommendation with the suggestion that a building be erected, the lower floor of which can be used for play-rooms, while the upper floors can be used for class rooms and sleeping-rooms for the male pupils. I hope the original plan of erecting residences for the married teachers and officers of the Institution will be carried out.

The branch office opened at the Institution, of the Montreal Telegraph Company, is found to be very convenient.

I take this occasion to return my thanks to the editors and publishers of the following periodicals and newspapers, which are sent free to the Institution:—

Harper's Magazine, New York.
Frank Leslie's Illustrated Newspaper, do.
The Leader, Toronto.
The Dominion, Windsor.
The New Dominion, Port Dover.
The Times, Ottawa.
The Advertiser, London.
The Church Herald, Toronto.
The Mutes' Chronicle, Ohio Institution for the Deaf and Dumb.
The Courier, Trenton.
New York Weekly Witness.
The Journal of Education, Toronto.

We are under obligations to the managers of the Grand Trunk Railway, the Great Western Railway, the Northern Railway, the Midland Railway, and the Prescott and Ottawa Railway, for granting passes to our pupils to and from home for one fare.

Our warmest thanks are due W. K. Muir, Esq., Managing Director of the Great Western Railway, and C. J. Brydges, Esq., Managing Director of the Grand Trunk Railway, for special favors granted. The numerous acts of courtesy extended to our pupils by the Conductors and Officials of the several Railway lines is highly appreciated.

I must again express my thanks to the members of the Press throughout the Province for their many kind notices of our Institution.

The duties pertaining to the housekeeping department were discharged by Mrs. Terrill until the close of last term. At your suggestion, I secured the services of Mrs. G. A. Thompson, and have placed her in charge in this department. With experience, I think she will make an efficient officer.

I beg leave to call your attention to the report of Dr. W. Hope, our physician, and hope the suggestions he has made will be adopted. He has been assiduous in his attention to the sick, and has from time to time made many excellent suggestions calculated to promote the sanitary condition of the Institution.

I send you herewith a detailed statement of the expenditures of the Institution for the year ending September 30th, 1872, prepared by our steward and book-keeper, Mr. Angus Christie, who has rendered me valuable aid during the past term.

I take great pleasure in calling your attention to the zeal and energy displayed by the several officers in the discharge of their respective duties. They seem actuated by a general desire to do all in their power to advance the interests of the Institution.

Before concluding, I beg leave to return you my sincere thanks for the personal interest you have manifested in our work, and for the hearty support you have given in your official capacity to all measures which you thought calculated to promote the prosperity of the Institution.

We have great cause to be grateful to our Heavenly Father, for the success that has crowned our efforts during the past year, and we commence another year with renewed determination to do all in our power for the advancement and prosperity of the Institution committed to our care.

Respectfully submitted,

W. J. Palmer,
Principal.

SURGEON'S REPORT.

Ontario Institution for the Deaf and Dumb.
Belleville, October 6th, 1872.

J. W. Langmuir, Esq.,
Inspector, Asylums

Sir,—The By-law defining the duties of the Physician of the Deaf and Dumb Institution provides among other things, that he shall examine every pupil on their reception with regard to their then state of health; that he shall have the general care of the health of the pupils, and the officers and servants of the Institution, together with their families; that he shall frequently visit the several departments of the Institution, and shall notify the Principal for the information of the Inspector, of any defective sanitary arrangements—insufficiency of clothing or bedding, the quality of the provisions, or any other defect which in his opinion may prejudice the health of the pupils, and that he shall annually report to the Inspector the sanitary condition of the Institution with such recommendations as he may deem necessary for the preservation of the health of the pupils.

Although I was only officially appointed Physician to the Institution in March last I have had charge of the Medical Department since the 1st January, 1871, and any remarks that I may make will cover the period from that date to the 1st October, 1872.

When I was first called in to see the pupils, the School had been in operation about three months, the contractor was engaged at work on the inside of the building, the heating apparatus had proved insufficient, the drainage also had proved to be defective, so much so that water stood in a portion of the cellar and close up to the boiler from six to eight inches in depth. It was also found that a large proportion of the pupils had entered the Institution

with insufficient clothing for the winter season, and as a consequence of these causes combined a few cases of acute rheumatism and some other diseases of a less grave character were the result.

Had it not been for the energetic exertions of the Principal, Dr. Palmer, in procuring stoves and a supply of warm clothing to meet the emergency the consequences might have been of a serious nature.

By the addition of a second boiler and deepening the main drain a short distance from the building these defects have been remedied, and it gives me pleasure to state that with the exception of the day water-closets, in the rear of the building, both of which require to be drained to the main sewer, the sanitary and hygienic condition of the Institution are all that could be desired.

The number of pupils, together with the officers, servants and their families which the By-law makes it my duty to attend were, during the period embraced by this return (one year and nine months), about 200. Two hundred and nine cases appear to have come under the care of the Medical Officer, deduct from that 63 cases which were merely entered on the register as having been vaccinated, leaves 146. Even this number would seem to show that a large number had been ill. This, however has not been the case. The disproportion between the number of persons and cases is accounted for by the repeated return of the same individual to the sick list. This number, large as it would appear, does not include all that were prescribed for, as some were of too trifling a nature to be noted on the register, only those cases were recorded that could properly be placed in well defined classes of disease. All the sick pupils (with the exception of a few cases of eruptive disease) have been treated in the dormitories. This has been found to be both inconvenient and undesirable, as it not only increased the labour of the nurses, but prevented the possibility of the proper ventilation of the rooms during the day. It will not be continued in the future. Two rooms in the third story have been set apart for Hospitals, one for the girls, and the other for the boys, and all cases of sickness in the future, except those of a trifling nature, will be treated therein.

I may here state that no epidemic or contagious disease has entered the Institution since it was opened, although typhoid fever and dysentery have prevailed to a considerable extent in Belleville and vicinity during that time. Notwithstanding the comparatively large number which this return exhibits, it is remarkable that the appearance of the pupils (with a few exceptions) bespeaks the very reverse of unhealthiness. Indeed it would be difficult to procure an equal number of individuals taken indiscriminately from any population who evince such unequivocal marks of robust health.

I may here state that the food of the pupils is of a sound and nutritious description and fully equal to that used by Canadian families in easy circumstances. I cannot conclude this brief report without expressing my conviction that the favourable statement which I am able to make regarding the health of the pupils (when we consider the difficulties that had to be met) is mainly due to wholesome food, the attention given to out-door exercise and amusement, the strict regard to cleanliness, and the firm, steady and at the same time kindly discipline under which the government of the Institution is administered by the Principal, Dr. Palmer, and the other officers under his authority.

W. Hope, M.D.,

Physician, Deaf and Dumb Institution,
Belleville, Ont.

REPORT

OF THE

PRINCIPAL

OF THE

INSTITUTION FOR THE BLIND,

BRANTFORD.

ONTARIO INSTITUTION FOR THE BLIND,
BRANTFORD, October 1st, 1872.

J. W. LANGMUIR, Esq.,
Inspector of Asylums, &c.

SIR,—I have the honour to submit to you my report of the Ontario Institution for the Education of the Blind, for the term which commenced May 1st, and ended June 26th, 1872; also for the month of September, part of the present term, which will continue till July, 1873.

Owing to the incomplete state of the building, and the shortness of the term, there were in attendance only eleven pupils—seven boys and four girls—during the months of May and June. Of this number *three* were admitted as orphans, their clothing being mostly supplied by friends or the surviving parent, *six* were paying pupils and *two* were supported by Councils. These Councils have not yet paid.

During the month of September, there were in attendance thirty-six pupils, whose age, residence, and religious persuasion are given in the following table:—

No.	Age.	P. O. Addres.	County.	Religious Denomnation.
	13	Orphans' Home	Kingston	Episcopalian
2	18	Oakville	Halton	"
3	12	Orphans' Home	Toronto	"
4	8	Kingston	Frontenac	"
5	18	Toronto	York	"
6	16	Bradford	Simcoe	"
7	12	Toronto	York	"
8	18	Wellington	Prince Edward	Friends
9	15	Montreal	Montreal	Episcopalian
10	15	Jordan	Lincoln	Methodist
11	13	Perrytown	Durham	"
12	13	Toronto	York	Episcopalian
13	15	Mitchell	Perth	Bible Christian
14	14	Trowbridge	"	Methodist
15	16	London	Middlesex	Episcopalian

No.	Age.	P. O. Address.	County.	Religious Denomination.
16	8	Winchester	Glengarry	Presbyterian.
17	15	Lyndoch	Norfolk	Methodist
18	13	Fergus	Wellington	"
19	8	Normanton	Bruce	Presbyterian.
20	9	Brantford	Brant	Roman Catholic.
21	8	"	"	Episcopalian.
22	24	Erin	Wellington	Presbyterian.
23	17	Mt. Pleasant	Brant	Episcopalian.
24	17	Stratford	Perth	"
25	16	London	Middlesex	"
26	13	Brantford	Brant	Lutheran.
27	15	Teeswater	Bruce	Presbyterian.
28	11	Kingston	Frontenac	Methodist.
29	15	Middleport	Wentworth	Episcopalian.
30	13	Clinton	Huron	Methodist.
31	12	Sharon	York	Davidite.
32	9	"	"	"
33	24	Mt. Brydges	Middlesex	Methodist.
34	9	Orphans' Home	Hamilton	Episcopalian.
35	18	Keswick	York	Methodist.
36	14	Raglan	Ontario	"

Out of this total of thirty-six pupils, *seventeen* are supported by Councils, *seven* are orphans, *eleven* are paying pupils, and *one* is admitted free, there being two blind in the same family. But of the seventeen supported by Councils, *five* are orphans, making in all *twelve* orphans; and as regards the eleven paying pupils, the parents of six of them have paid only till they can make application to their Councils. *Four* only—one having died—can be reckoned as paying pupils, and these cannot long be continued in the institution, owing to the indigency of their parents.

During the months of July and August, in accordance with your instructions, I took a tour through the Province, in order to learn how many pupils might be expected to attend the ensuing session, and it is in point here to say that had I not seen the parents themselves, as well as many of the township councillors, not above one-half the number now present would have been in attendance. Many had never before heard of the Institution, while many of those who *had* heard of it entirely mistook its character, from its being dubbed an Asylum, a name inapplicable to an educational institution. It was only by the most careful and persistent reasoning that the mother could be prevailed on to give up her helpless child, even when she knew it to be for its ultimate and certain good. In only two cases, however, were my arguments unavailing, and in both these the mothers consented and countermanded as often as the great Queen in signing the death-warrant of Essex, ultimately deciding to keep their children at home. Both these are fast falling into idiocy.

The eye is the only medium through which the brain converses with the outer world. The brute creation if blind, and being incapable of contemplation, would possess no intellect, as there would be no agent to stimulate action in the brain, which would, as a natural consequence, in this inactive state, become atrophied and weak. So with human beings that are blind. Hence the necessity of an education to develope thought and action in this great centre of the nervous system. With the blind who were born so, or who became so in infancy, idiocy and the loss of health, even before the meridian of life, are almost certain, except among those classes where they are made to lead an active life, and exchange thought constantly with the seeing. The necessity, therefore, of schools for the blind, and of parents sending their children to be educated, which is their only salvation, need not be argued.

Blindness among children, if we except those who were born so, is almost entirely the result of poverty—ophthalmia, scarlatina and small pox—those offspring of wretchedness—laying hold of and destroying those delicate organs which are incapable of enduring exposure. Of the thirty-six now in attendance, no less than fourteen became blind from inflammation, brought on by the neglect of parents; six were accidental; seven were born blind; two paralysis; two fever; two small-pox; one measles; one cataract. The number of those in the Province who were born blind is very large, the proportion, so far as yet learned, being, perhaps, greater than in any other country.

It may be interesting to say that the number of blind persons now on the face of the

earth is quite incredible to those who are not conversant with the subject. The late Principal of the Institution for the Blind at Berlin prepared a table, in which it is estimated that Prussia has one blind person in every 1,400 inhabitants; Belgium and France, one in every 1,300; Norway, one in every 600; Sweden, one in every 1,000; Switzerland, one in every 1,600; Great Britain, one in every 2,000; Egypt, one in every 100. The number of blind in France is about 33,000; Great Britain and Ireland, 25,000; Russia, 52,000; Germany 40,000; United States, 20,000. In Southern and Central Europe, the number of blind males exceeds the females; in Northern Europe, the females exceed the males.

As yet the number of blind in the Province of Ontario is not known, but reckoning with the same ratio as the State of New York, namely, one to every 2,500, and taking the population at a million and a half, we have a result of 625. But as we are not so subject to ophthalmia as our southern neighbours, are less influenced by those blighting diseases which are common to large cities, and enjoy an immigration much smaller from European countries, this number may be reduced to 500, and as about one-fifth of the blind are under twenty-one years of age, we have probably one hundred who are eligible to be educated in this Institution. Of this number I have now the names of seventy, thirty-six of whom, as aforesaid, are attending this session. The remaining thirty-four are prohibited mainly from the inactivity of councillors, who evince no disposition to secure the payment of board. The embarrassment of travelling expenses has been removed by the great kindness and liberality of the Managing Director of the Great Western Railway, who permits the pupils and their guides to travel free, or at half-fare, as I may deem proper. All persons who come for the purpose of visiting the Institution are passed at half-fare. Half-fare tickets are likewise granted to the pupils by the Grand Trunk and Northern Railways. To all these noble gentlemen, the Directors of these roads, I beg to return my sincere thanks.

But in addition to this number of pupils, there is a large class of healthy blind persons between the ages of twenty-one and thirty, who are very anxious to learn some trade, and whom, it appears to me, it would be very proper to admit as soon as the workshops are completed, that the greatest amount of good may be extended to this unfortunate and dependent part of the community. All of these may not, indeed *could* not, be admitted at once, but as some of the trades—broom-making for example—can be acquired in a few months, we can, in a few years at least, benefit, in a small degree, all the blind of this age in the Province.

In order to learn the number of blind persons of all ages in the Province, I would respectfully suggest that the assessors of every municipality be supplied with our forms of application, and that on meeting with a blind person, one of these be filled out and returned to this Institution. It is to be hoped that greater accuracy will prevail than that observed by the councillors who made the returns two years ago, by which I was repeatedly misled, the age in some cases being seven, and often ten years above the true age of the person named.

Literary Department.

This department is very similar to an ordinary school, instruction being mostly oral. We have been fortunate in securing the services of Miss Mary D. Tyrrell, late of the Institution for the Blind at Batavia, who thoroughly understands the most approved methods of teaching the blind, especially in reading, writing, arithmetic and geography, for which special books and appliances are employed. As this branch of our apparatus is very limited, an addition will require to be made as soon as practicable, as well as to the teachers' library, the latter to consist mainly of books of reference, together with historic and other tales, adapted to reading to the pupils in the evening. For this purpose it will further be necessary to take a large number of daily, weekly and monthly periodicals, in order to acquaint them with the general news and topics of the day. It is also desirable to obtain a complete collection of philosophical and chemical apparatus, models of machinery, architectural structures, busts of distinguished persons, a human skeleton, and an anatomical figure in plaster of paris, models of animal and vegetable fossils, prepared specimens of fishes and birds, sets of weights and measures, a pair of scales for testing arithmetical tables, a set of apothecary's phials, geometrical forms, planes and solids, and blocks for illustrating the square and cube roots: foot, yard and rod measures, with the sub-divisions marked in relief, to cultivate their ability to estimate dimensions and distances. All these, though unnecessary for seeing children, are indispensable in teaching the blind, who know nothing of form except when brought within reach of their tactual sense.

The regular course of study adopted in this Institution at present is as follows: —
Spelling, with definitions.
Reading in embossed characters.
Writing in ordinary letters with grooved card and pencil.
Tangible writing in the N. Y. point system.
Geography, descriptive and physical, with dissected maps.
Arithmetic, mental and practical.
English Grammar, Etymology and Syntax.
History, English and general.
Music, vocal and instrumental.
Gymnastics—no implements as yet supplied.

At present only *three* teachers are engaged in teaching the above—Mr. T. M. Brown, Miss Mary D. Tyrrell, and Miss Mary E. Browne—the latter devoting her time to music till a musical professor be employed. When that event transpires, Miss Browne will act as literary teacher, but will still retain her class in singing. An indispensable feature in the said musical professor, will be his ability to teach the art of tuning, since it is intended to make this an important item in our vocabulary of instruction. The blind make even better tuners than the seeing, and command higher salaries with manufacturers of stringed instruments. A blind pupil of the Baltimore Institution earns $800 annually, tuning pianos. I refer to the subject thus early that a few old pianos may be supplied the Institution for tuning purposes.

It had been to me a subject of very great concern, before the opening of the Institution, what style of printed character should be introduced; but on becoming thoroughly acquainted with the subject, the course became clear, namely, that the embossed Roman character should be considered superior to all others in reading books for the blind. I have also introduced the N. Y. point system, which is not only easily read by the blind, but they can also *write* it, which cannot be said of any line system. This double advantage of the point print gives it an immense precedence over all others, as far as the blind themselves are concerned, but that it will ever become the prevailing type is, to say the least, doubtful; since the characters are arbitrary, and the seeing community, who mainly decide the question, are singularly oblivious to what they do not at a glance understand. There is a settled conviction with nearly, if not all the Superintendents in the Union, that the Roman letter is the only one that should be employed in such books, and accordingly all the literature of the country, which is already quite extensive, and is annually on the increase, is printed in that character. But in England and on the European Continent, several systems are in vogue, the most important of which, perhaps, is Moon's—the system introduced by Prof. Megann, at Hamilton. This, however, has been discountenanced by the American schools, for as his letters are but modified forms of the ordinary letter (yet sufficiently so to become arbitrary), and though much larger, can be distinguished no more easily than the Roman letter, Mr. Moon has not been deemed justifiable in introducing an arbitrary character, thus separating the literature of the blind from that of the seeing without giving something like an equivalent in the way of brevity and tangibility. The introduction, therefore, of this type into the schools of this country, would have completely isolated our Institution from the twenty-seven others on the continent, and our blind youths would be unbenefited by the vast number of publications now issued by the American press, including a monthly, the entire Bible, and scores of other works which are constantly being printed with the best and most recent improvements; whereas the Moon type appears in some half a dozen books, which are becoming more and more unpopular even in Europe, and are only obtainable in England.

But while the Roman embossed character is universally acknowledged in the American schools, they are not agreed as to the use of small and capital letters. The Boston Institution, the oldest on the Continent, which has always carried on an extensive printing business, and which for many years supplied the other and more recent Institutions, has from the first, only employed the small or lower case letter, disclaiming the use of capitals. This is now known as the Boston type. But Mr. N. B. Kneass, of the Pennsylvania Institution, at a late date, introduced the capital, thereby making the print the same as in ordinary printed books for the seeing. This is now known as the Kneass or combined type. We have introduced both these, the former, however, only from necessity, for it must sooner or later give place to the combined print. This point was fully discussed at the Convention of the

American Educators of the Blind, held at Boston six weeks ago, and although the vote stood fifteen to fifteen, it was pretty apparent that the older Institutions held to the Boston character mainly from their having almost exclusively used it.

The only plea the advocates of the Boston letter were able to argue before the Convention was, that it has the advantage of a simpler alphabet—the pupil requiring to learn twenty-six letters instead of fifty-two. This position, however, is exceedingly weak, and should not have been mooted by those who hold it as a maxim that the mental ability of the blind is not inferior to that of the seeing, and that—to use the words of its chief defender, Dr. Howe—"The blind should be educated simply as persons who cannot see, or *as seeing persons in the dark.*" It is a well-known fact that blind children acquire the alphabet, and learn to read, much more rapidly than seeing ones, and, therefore, the argument, if good against the use of capitals in books for the blind, is doubly so against their use in books for the seeing. Strange to say, however, these same advocates teach the capital letter in their schools for ordinary script writing, in which, of course, *fifty-two letters are employed*, and Mr. Wait, the ingenious representative from New York City, voted against the use of capitals in the Roman text, simply because the words which fell from his lips while he was speaking were all of the Boston letter—not a capital among them!—owing, no doubt, to the fact that the gentleman possesses a very small mouth. He has, nevertheless, invented capitals for his own point-system.

The following arguments, which I had the honour to recapitulate before the Convention, should, in my opinion, set this subject at rest:—

1. By employing capitals the blind are educated to consider themselves equal in mental ability to the seeing, thereby, in a measure, destroying that conviction of dependence so prevalent in this afflicted class. These people take a pride in deporting themselves in all matters as seeing persons, and every accommodation in their behalf, to their sensitive natures, appears a recognition of inferiority and dependence.

If we compare the two alphabets, the small and the capital, it will be seen that nearly one-third, c, q, p, s v, w, x and y, are the same, differing only in size, while some of the others, though somewhat different, can easily be recognized.

2. There are many words that should commence with a capital to distinguish them from the same word written with a small letter. The words *God* and Father are familiar examples, which the blind must, of course, be taught to express either with a small or capital letter, according as they wish to indicate an earthly or a divine being. The capital is also necessary to secure the idea of personification when the word is to be parsed as a proper noun, as "*Confusion* heard his voice."—(Milton.) If a thorough and critical education is an advantage to any one, it must be peculiarly so to the blind, and no amount of palliation will atone for these palpable defects. Moreover, if their literature is yet comparatively in its infancy, and of which newspapers and other periodicals must some day form a part, the greatest confusion and awkwardness will arise from the suppression of these letters.

3. Capitals are indispensable to indicate periods, proper names, and the first word in every line of poetry.

4. Those who can read the combined can also read the Glasgow print, which consists entirely of capital letters. The only Dictionary for the blind—an abridgment of Worcester—is printed in this type, and strange to add, Mr. Chapin, the venerable Superintendent of the Pennsylvania Institution, and who got up this book, entirely disclaims the advantages of the capital letter, though he himself, and not Mr. Kneass, originated the combined print! It is admitted further, that those pupils who can read the combined letter, can also read the Boston, as it embodies the same alphabet, thereby securing the literature of both types, while, of course, those who only learn the Boston derive no advantage from the varied and annually increasing literature of the combined system.

5. A large number of this afflicted class became blind after they had learned to read in schools for the seeing, and are naturally prejudiced in favour of capital letters.

6. Capitals are requisite in script or pencil writing. Even those Superintendents who ignore their use, without an exception, employ them in their schools, as well as admit those publications which appear in the Kneass system.

7. Lastly, books for the blind, with capitals elicit the interest of the seeing. As the ignorant parent, to whom Euclid and Algebra are unfamiliar, has no interest in his son's learning these branches, so seeing persons have little interest in assisting persons to read what is not satisfactory to their own convictions and prejudices. The nearer we move in conformity

with the prejudices of our fellows, the more likely are we to receive their sympathies and aid. The combined system, therefore, is much more liable to interest those in authority, and lay hold of their charity to support these Institutions of learning, than is the Boston letter.

The editors of the following papers have kindly supplied us us with news, not only for our own edification, but for the interest and amusement of the pupils in the evening:—

Toronto *Daily Mail.*
St. John, N. B., *Daily Telegraph.*
Montreal *Daily Witness.*
Kingston *Chronicle and News.*
Ingersoll News.

Before closing my report, I feel it a duty to say that in carrying out the instructions of the Government to visit the Institutions for the Blind at Batavia, Baltimore, Philadelphia and New York, I received from the Trustees and Superintendents of these Institutions every consideration and kindness. Dr. A. D. Lord, of Batavia, and William Chapin, Esq., of Philadelphia, men who have grown grey in the great work of educating the blind, exerted themselves in the most anxious and arduous manner to qualify me for the work in which I am now engaged. To these gentlemen, to Mr. Wait, of New York, and Mr. Morrison, of the City of Baltimore, I desire to express my sincere thanks.

I have the honour to be,
Sir,
Your obedient servant,

E. Stone Wiggins.
Principal.

PHYSICIAN'S REPORT.

J. W. Langmuir, Esq.
Inspector of Prisons Asylums, &c.

Sir,—I have the honour to report that during the short period the Institution has been in existence, the health of its inmates has been remarkably good, with exceptions to be hereafter noted.

It must be borne in mind that the blind are naturally more delicate in health than the seeing, their infirmity preventing them from engaging in the active bodily exercises so necessary to muscular development and sound constitution in young persons. The very occurrence of blindness often, I may say generally, depends upon some defect or vice in the constitution, either hereditary or acquired, which produces inflammatory or other changes in the eyes, resulting in the loss of vision. To counteract these adverse influences we have the light and airy situation of the Asylum on a gentle rise of ground, the loose and porous nature of the soil, the natural drainage of the grounds, together with the isolation of the buildings—conditions which should combine to render the location one of great salubrity. The building, too, is large, the rooms are capacious and well lighted the halls are spacious, and a plentiful supply of fresh air is always secured.

As far as my observation has extended the food of the pupils has been provided in sufficient quantity and variety, and every thing necessary has been done by the officers of the Institution to promote the health and comfort of those under their charge. All my own efforts to either preserve or improve the health of the pupils have been cheerfully seconded by the excellent and very intelligent Matron, I must not omit to mention, in this connection, the unwearying attentions of the nurse to the sick.

During the few weeks the Institution was in operation, after the formal opening in May, there were only a few cases of illness, and the duties of the physician were comparatively light. Since the opening of the present session, however, a typhoid or malignant form of dysentery, which became epidemic in this region of country, and which reached its greatest

intensity in the streets leading to the Asylum grounds, also made its appearance in the Institution, and one of the pupils, John Walker, fell a victim to its virulence. His case assumed a grave type from the beginning, and his widowed mother and sisters being summoned from a distance, had the mournful satisfaction of ministering to him throughout his illness. All our efforts, aided by the kind counsel of a distinguished physician of the town, could not stay the hand of the destroyer, and his disease ran a rapid course to a fatal termination. Three children of the engineer at the lodge-gate were stricken by the same fatal disease, one of whom, under the care of another practitioner, died, the others, attended by myself, slowly recovered.

I cannot conclude this report without directing your attention to the condition of the water-closets, which, owing to some defect in the drain-pipes, have failed in their intended purpose. The closets outside the building have, in consequence, been brought into use, but as there is no drainage from them, they may at any time become the fruitful source of infection and disease. It is absolutely necessary, in my opinion, that all excrementitious matter should be carried off by a drain pipe, which may be continually flushed with water. I would also recommend that the room used as a dormitory on the female side, and unsupplied with any means of heating, should be furnished with a stove to render it comfortable.

Respectfully submitted.

William C. Corson, M.D

REPORT

OF

THE WARDEN

OF THE

PENETANGUISHENE REFORMATORY.

PROVINCIAL REFORMATORY,

Penetanguishene, 28th October, 1872.

To J. W. LANGMUIR, ESQ.,
Inspector of Asylums, Prisons, &c.,
Toronto.

SIR,—I have the honour to submit, for the information of His Excellency the Lieutenant-Governor, the following report of the Provincial Reformatory under my charge:—

At the expiration of the past year there were juvenile convicts	155	
Admitted during the year	47	
Escape, re-taken	1	—203
Discharged during the year	40	
Sentence remitted	3	
Escaped	2	
Remaining in Reformatory on 20th of September	158	—203

RELIGION.

Church of England	59	
Roman Catholics	60	
Presbyterians	14	
Methodist	21	
Baptist	3	
Lutherans	1	—158

NATIVITY.

Upper Canada	115	
Lower Canada	8	
England	10	
Ireland	4	
Scotland	3	
United States	12	
Halifax	3	
Newfoundland	1	
Guernsey	1	
Germany	1	—158

PUNISHMENTS AWARDED.

Month.	No. under Punishment.	Meals—Bread and Water.	No. Punished with Birch.	No. of Lashes.
1871.				
October	1	9		
November				
December				
1872.				
January	8	36	4	42
February	4	24	4	60
March	4	18	4	48
April	1		1	12
May	4	48	4	48
June	5		2	18
July	1	9	1	12
August	1		1	24
September	3	36	3	36
	32	180	24	300

AGES.

1 @ 7..... 2 @ 8..... 3 @ 9.....11 @ 10
10 @ 11..... 9 @ 12.....17 @ 13.....20 @ 14
20 @ 15..... .....18 @ 16.....15 @ 17.....11 @ 18
9 @ 19..... 6 @ 20..... 3 @ 21..... .... 3 @ 22—158

Showing in what manner the offenders were employed:—

	No.	Average.
Carpenter shop	8	8
Shoe shop	15	12
Tailor shop	23	22
Cooper shop	9	7
Blacksmith shop	4	4
Farm, stables and teaming	11	10
Gardening	3	6
Cook-house and bakery	5	5
Dining hall and wash-house	8	8
Cleaning wing A and B	10	10
Drilling stone, chopping wood, &c	5	9
New buildings	5	5
Sawing wood and general work	51	48
Warden's dwelling	1	1
	158	155

GENERAL REMARKS.

I stated in my report last year that I consider this Institution is fulfilling the end for which it was established many proofs of which have come under my own knowledge. Though the boys on leaving pass out of my sight, I by no means forget them; their prosperity is to me a great source of gratification, and I can assure the Government that almost in every town in the Province, and in some even in the United States, can be found good and faithful mechanics who learned their trade in this Institution, while others are earning an honest livelihood by farming. I have also stated, in one of my former reports, that I consider at least 80 per cent. of the boys who have left this Institution are leading honest, industrious lives. With the view of ascertaining how far my assertions could be borne out by facts, I addressed the following letter to the Warden of the Kingston Penitentiary:—

PROVINCIAL REFORMATORY,
Penetanguishene, 12th Oct., 1872.

SIR,—Within the last four years, 185 boys have been discharged from this Institution, whose names I herewith transmit, in the hope that you will be so kind as to inform me how many of that number have found their way to the Penitentiary. The time for making my annual report, for the information of His Excellency the Lieutenant-Governor, is now at hand, and I am most anxious to give all information as to the number of youths who have relapsed into their old vicious habits since they left this Institution.

I have the honour to be,
&c., &c.,
(Signed) WM. MOORE KELLY,
Warden.

To JOHN CREIGHTON, ESQ.,
Warden,
Kingston Penitentiary.

To which I received the following reply:—

KINGSTON PENITENTIARY, 16*th October*, 1872.

DEAR SIR,—I received the enclosed list this morning, and also a letter accompanying it.

The letter requested information as to how many of the list have found their way into the Penitentiary since their discharge from the Reformatory. I find only four, which is a very small proportion. The four are No. 3, No. 32, No. 59 and No. 84.

Truly yours,
(Signed) JOHN CREIGHTON,
Warden.

To WM. M. KELLY, ESQ.,
Warden,
Provincial Reformatory.

This communication is most satisfactory, coupled with the fact that only three within the last four years have been re-committed to this Institution. To the moral and religious instructions which they had received from their respective chaplains, and from the daily habits of industry and discipline in which they had been trained during their confinement, may, no doubt, account for the few who have relapsed into their evil courses. Of the 185 discharged, 178 must be leading honest lives, otherwise they would have been re-committed to either the Penitentiary or Reformatory.

It must, at all events, be apparent that if the training in this Institution has not thoroughly reformed the 178 above alluded to, it has so far improved them that, though not perfect, they become orderly and peaceable citizens, and as obedient to the laws of the country as the generality of the people around them. The original Board of Directors, in their preliminary report of 1860, speak so rationally on this point, when referring to this Institution, that I cannot forbear giving the following short extract:—"It must be expected that many "of these youths, of those even who make the fairest promises, will relapse into crime. The "experience of all countries proves only too clearly this sad truth. But many will be saved, "and the others (whatever their future course) can hardly fail, sooner or later, to profit by "the excellent precepts and the good examples which a generous country has presented to "them for their guidance and imitation. Besides, we must try to do good for the sake of the "good, or rather for the sake of the Author of all good, and assuredly it is an enviable and a "noble task to attempt even to snatch from vice and ruin these poor children—orphans for "the most part—whose greatest crime is, not unfrequently, that of an unfortunate parentage."

I have no object to subserve by embellishing a report, or magnifying the benefits this Institution has conferred. I give plain facts, so that every reader may judge how far it has fulfilled the end for which it was established.

The economy of the working of this Reformatory will also, I think, bear favourable comparison with any similar institution on this Continent. I had occasion, in June last, to address a letter to the Honourable the President of the Council, from which I make the following extract:—

"May I be permitted to bring under your notice an article that appeared in *The Globe* of the

14th, inst., which, with an extract from the Report of the Board of Guardians of the Chicago Reform School. I herewith transmit.

"From this Report it will appear that this Institution will bear favourable comparison with respect to the economy of its working with any of the Reformatories in the United States."

EXTRACT from the Report of the Board of Guardians of the Chicago Reform School, 1871.

STATE.	TITLE.	COST PER CAPITA.
California	Industrial School	$138 00
Connecticut	State Reform School	179 00
Illinois	Chicago Reform School	114 00
Indiana	House of Refuge	130 00
Kentucky	Ditto.	129 00
Maine	State Reform School	117 00
Maryland	House of Refuge	129 00
Massachusetts	State Reform School	159 00
	Nautical Reform School	170 00
	State Industrial School for Girls	156 00
Michigan	State Reform School	132 00
Missouri	House of Refuge	215 00
New Hampshire	State Reform School	155 00
New Jersey	Ditto.	228 00
New York	Catholic Protectory	113 00
	House of Refuge	118 00
	Juvenile Asylum	131 00
	Western House of Refuge	114 00
Ohio	House of Refuge	183 00
	State Reform School	157 00
Pennsylvania	House of Refuge (white)	118 00
	Ditto (coloured)	151 00
	Western House of Refuge	231 00
Rhode Island	Providence Reform School	180 00
Wisconsin	State Reform School	157 00
	Averages and Percentages	$141 00
	Provincial Reformatory, Penetanguishene	112 00

AVERAGE OF BOYS, 160.

To Grant from Provincial Government		$21,710 00
Less Revenue	$1,770 00	
" Ordinary Repairs	990 99	
" 160,000 Bricks, at 6 per M	960 00	3,720 99
		$17,989 01

Or equal to $112 per boy, per annum.

On the 8th of July two boys effected their escape, one an Indian who had served three years and ten months in the Reformatory, and whose term of confinement would expire in two months and four days. The Steward, as was customary, gave this boy a pass to go to the slaughter house, and he added the name of his accomplice. After this breach of confidence, I countermanded the order for passes. Three others made the attempt on 1st September, but were captured.

With the above exceptions, the general conduct of the boys has been very satisfactory. The facility to escape is so great, that it is a great temptation to the boys to attempt it. Notwithstanding all the vigilance that can be adopted, they sometimes burrow under the fence or take out a plank, and in two minutes find refuge in the woods. Presuming that it is now finally determined that the Reformatory should be permanently established

here, I would again most respectfully suggest the necessity of a high stone wall in place of our present board fence. No doubt a railroad will soon come into close contiguity to the Reformatory, making it the more necessary to have the enclosure about the building made perfectly secure.

I have the honour to be, Sir,
Your most obedient, humble servant,
WILLIAM MOORE KELLY,
Warden.

CHAPLAINS' REPORTS.

REFORMATORY, *Penetanguishene*, October 16, 1872.

To Her Majesty's Inspector of Prisons for the Province of Ontario:

SIR,—In my last Report which I had the honour of sending in, I mentioned the necessity of my having an assistant in the school, as there are far too many boys for one teacher to attend to. I know I need not say more on this subject, as you must yourself have observed the great disadvantages under which I labour in that respect.

In my former Reports I have frequently dwelt on the sad consequences of very young boys being sent here for short periods. In such cases even the longest period (which I believe is five years) is much too short. Boys are sometimes sent here of the ages of eight and nine years for a term perhaps of three, four, or five years, so that these poor boys at the inexperienced ages of twelve, thirteen, or fourteen, are turned loose on society, exposed to all their former temptations, and with no strength of character or experience of the world or settled religious habits to enable them to resist them; and if unfortunately, as is sometimes the case, their parents are persons of bad character or intemperate habits, they speedily return to their old companions in sin, and sooner or later become the inmates of the Reformatory or the Gaol. By my experience in this Institution, I am convinced that no boy should leave it till of the full age of sixteen years at least, as by that time we may expect that he will have gained some steadiness of character, so that when he returns home he may not be so easily led astray by wicked companions; indeed by that time we may hope that most of his former associates will either be settled in some employment, or what is better, will have left the place in search of employment elsewhere.

I have been led into this train of thought by the return of a little boy (now only eleven) who left the Reformatory a short time since after an imprisonment of three years. He was a steady, well-behaved boy as far as he came under my observation, and I believe also at other times; and I feel convinced that had he continued here under the system of daily regular employment and instruction till old enough to feel that he had strength sufficient by the honest labour of his hands to support himself in comfort and respectability, he would not so readily have returned to those habits and to those companions which formerly led him astray. But you cannot expect such considerations as these to have much weight with children of eleven or twelve; and hence the advantage of keeping them in the Reformatory till a riper age gives them greater powers of judgment and reflection.

If it is discouraging to have a boy returned upon our hands (a very rare occurrence), it is cheering to know that many who have left this Institution are doing well in the world as respectable members of society, and more cheering still to shake them by the hand and hear from their own mouths that they have constant employment at good wages. I had two calling on me the other day, (one of them left the Reformatory more than two years since, the other lately), both of them earning an honest livelihood, and cheerful and contented.

As something has been said about providing a new employment for some of the boys, I venture to make a suggestion on the subject. When I was in England I visited a Reformatory and found some of the boys engaged in basket-making, and it struck me that it would be a very good employment for some of the boys here; no machinery is necessary, the few tools required are inexpensive, and the osiers proper for the work could be grown on the farm, as there is some moist ground, fit for nothing else, well suited for their growth. Everybody wants baskets, and I think there would be a good demand for them—for potato-getting, fruit gathering, and for many operations connected with the house and the farm good strong

useful baskets are much wanted. No doubt many of the boys who showed a taste for the work would soon be able to turn out articles not only useful but ornamental, so as to suit all customers.

I have the honour to be, Sir,
Your most obedient, humble servant,
GEORGE HALLEN,
Protestant Chaplain.

PENETANGUISHINE, 26th October, 1872.

SIR,—There are at present sixty boys under my care.

The conduct of these during the past year has been generally good, and their improvement, both spiritual and temporal, has been undoubtedly progressive, being under regular superintendence.

His Grace the Archbishop of Toronto visited the Reformatory on the 26th of July, and on that occasion, after having examined every boy under my charge, he was pleased to express himself satisfied with their general conduct, and with the fact that the Juvenile Reformatory was constantly attaining the end for which it was instituted.

I am glad to know that my former suggestions concerning a more lengthened imprisonment of young boys have been taken into consideration, so that they may have time to form good habits and acquire strength of character.

I have every reason to believe, that all the youths discharged during the past year are conducting themselves honestly, and I have certain knowledge of several of them doing remarkably well.

Endeavouring to persevere and improve, I hope that Almighty God may continue to bless the efforts put forth for the salvation of the youths placed under my guidance.

I have the honour to be, Sir,
Your obedient servant,
J. P. KENNEDY,
To the Inspector of Prisons, &c. *Catholic Chaplain.*

SURGEON'S REPORT.

PROVINCIAL REFORMATORY, *Penetanguishine*, Oct. 26th, 1872.

SIR,—I have the honour to submit my report for the year just expired, or rather for a portion of last year.

Having been in attendance about three months, I can only speak for that time, save a passing notice of the general health obtained while making occasional consultation visits with my predecessor, the late Dr. Gilmor.

Taking into consideration the number that are together, the health of the boys has been good, which may be attributed in a great measure to the favourable situation of the new building, and the habits and cleanliness which the officers of the Institution are careful to inculcate.

Conspicuous among the causes of disease is the taint of scrofula, with which a large number are affected, and which has been inherited or acquired by their former mode of living.

We have had a few cases of inflammation of the lungs, occasionally a case of fever, but no contagious disease has made its appearance during the year.

A few accidents have occurred, but with the exception of a fracture of the leg, none were of a serious nature.

Several operations were performed to reduce deformities existing prior to their entering the Reformatory, and which I am happy to say proved successful.

I have the honour to be, Sir,
Your obedient servant,
P. HOWARD SPOHN, M. D.,
Surgeon.

To J. W. LANGMUIR, Esq.,
Inspector of Prisons for Ontario.

BINDING SECT. AUG 2 3 1957